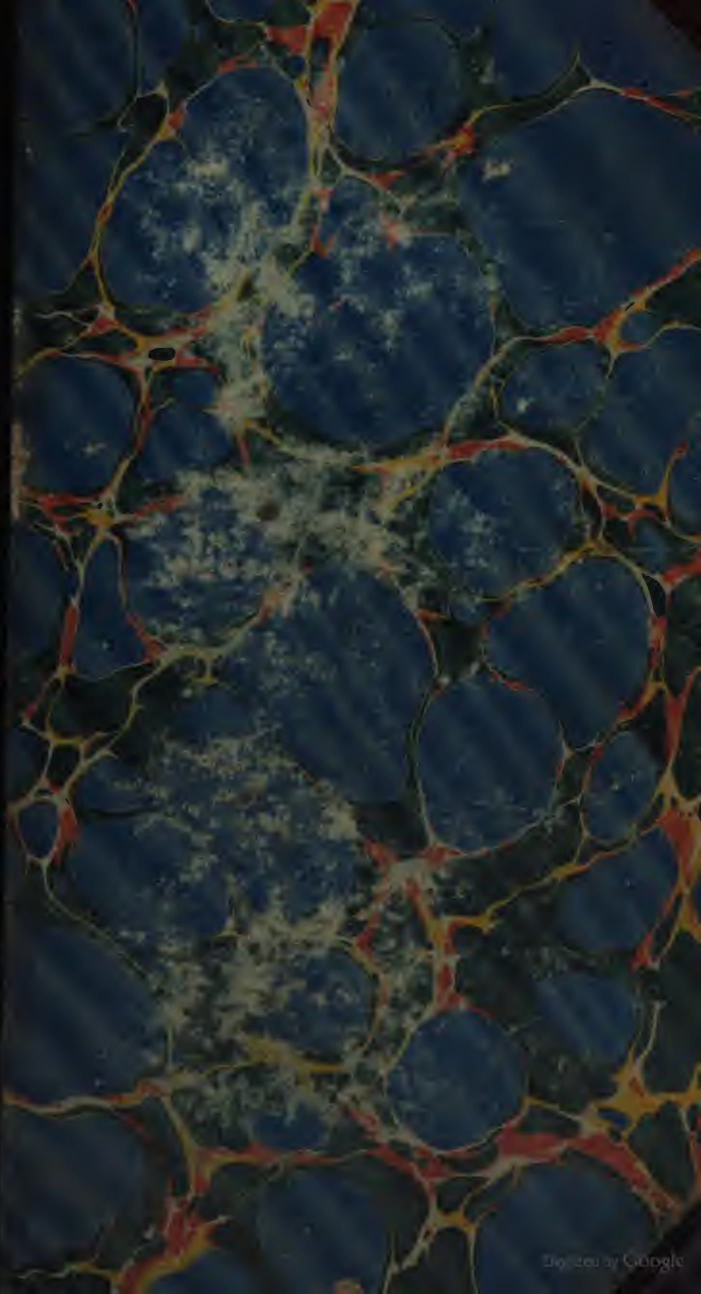

Commander George Williams, R.N.

Admiralty Survey

Per. 2311 e. 14/2

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THE

NAUTICAL MAGAZINE.

Vol. II.

for

1833.

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JOURNAL OF PAPERS

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Admiralty.

BIBLIOTHECA · BODLEIANA

ADDRESS.

The Nautical Magazine has now undergone the test of public opinion; and it is with complete satisfaction, that we inform our numerous friends, who have interested themselves in its success, that the result has realized the best hopes of its proprietors. The extensive circulation at which the work has arrived, and the increasing patronage which it continues to receive, have already secured its stability. To our nautical friends we may say, that the commencement of our voyage has been most propitious; our little barque is clear of all shoal water, and her place, by the dead reckoning, agrees with the observation.

On referring to our Prospectus, we believe that the terms of it have been fulfilled. We are, however, not anxious to give pledges; but, in the voyage before us, we have yet in view much that is new, interesting, and useful.

To our Subscribers in general, we beg to return our best thanks; but there are among them some, to whom we are under peculiar obligation for their assistance in getting our little vessel clear of the land, and in promoting the object of our voyage.

While we consider ourselves fortunate in being able to make this our boast, our readers may be assured, that fresh exertions shall not be wanting, on our part, to attend to the wants of all, as far as our room will admit, and to render the Nautical Magazine still more worthy the patronage of those who have already embarked in it for information or pleasure.

THE

NAUTICAL MAGAZINE,

&c.

JANUARY, 1833.

HYDROGRAPHY.

Note.—All Bearings are Magnetic, unless otherwise stated.

1. THE GORE BANK, *in the Bay of Bengal, Lat.* 17° 17′ *N., Long.* 85° 51′ *E. Least water yet found*, 23 *fathoms, rocky bottom.*

H.M.S. MELVILLE, with the flag of Vice-Admiral Sir John Gore, K.C.B., on board, on her way from Saugor Roads in July last, met with a rocky bank, which we believe has not yet been inserted in any chart. The Admiral observing the water to be much discoloured, ordered the lead to be hove, the result of which will be found in the following statement:

At noon, on the 24th July last, the latitude by DR was 17° 11′ N. and long. by DR 85° 48′ E. No observation for latitude or longitude had been obtained for two days before, the wind having blown constantly from the south-west, with heavy squalls and rain. At 4 P.M. obtained a good observation for the longitude by chronometer, which gave 85° 51′ E., the mean of six watches, the greatest difference between any two being only six miles, and four of them agreeing within two miles of each other. At 4 P.M. observing the water to be discoloured, sounded in 56 fathoms, doubtful. At 5 sounded in 45 fathoms, certain bottom. Wore ship and stood S. b. E. then followed three casts, having 42 fathoms, rocky bottom; then two casts, no bottom with 60 fathoms. At 7 P.M. had two casts, one in 25, the other 23 fathoms. At 7·45 P.M. had two good observations of the pole star, which gave the latitude 17° 30′ N. and 17° 31′ N. agreeing within a mile or two of the dead reckoning.

At 8 P.M. sounded in 25 fathoms.
8·10 .... 35 ......
8·20 .... 40 ......
8·30 .... 45 ......

By this last cast, the lead appeared to have struck on a plain surface, as the arming and the lead were bruised flat.

At 8·45 .... 55 fathoms, no bottom.
9 .... 75 fathoms, no bottom.

These soundings were taken alternately with the common and patent leads.

During the whole of these soundings the lead came up bruised, and the arming displaced, without any thing attached to it, to indicate the nature of the bottom.

Between 5 P.M. and midnight, the ship's course was S. b. E. ½ E. 4 knots per hour, making one point lee-way. From 9 till midnight sounded occasionally with 55 and 85 fathoms, no bottom.

At 8·4 P.M. latitude by Antares 17° 17′ N. The mean of these three observations will place the rocky bank in lat. 17° 26′ N. and long. (brought forward from 4 P.M.) 85° 51′ E.

It blew a gale from the S.W. with a heavy swell. The ship was under close-reefed topsails and courses, top-gallant-masts and studding-sail booms on deck, and it would have been at risk to have hoisted out boats.

Estimated variation of the compass 3° E.

2. New Island in the Mediterranean, *Lat.* 36° 52′ *N.*, *Long.* 1° 41′ *E.*

Lieutenant Baldock, R.N., commanding H. M. steam-vessel Firebrand, fell in with an island in the Mediterranean in August last, of which the following are the particulars:

> "On the 22d August last, at 1 P.M. Cape Tenez bore, S.S.W. by compass distant three miles, we were steering eastward along shore, the ship going eight knots. At 4 P.M. we saw a small island right a-head, and at 4·45 we passed outside of it about a quarter of a mile. It appeared to be about three miles from the land, and to be a cable's length across, with a sandy beach. It was also covered with brushwood, and there was no appearance of shoal water about it. The position of it is about 36° 52′ N. and 1° 41′ E. At 6·30 we were on the meridian of the town of Zerzahal, the ship still going eight knots."

Lieut. Baldock further describes this as a very low island, and lying much in the way of steam-vessels passing along the coast.

3. Currents on the Coast of Brazil.

A paper, of which the following is a copy, has been found on the coast of Brazil, and transmitted to the Admiralty:—

> "H. M. S. Maidstone, on her passage to Bahia, lat. in 18° 20′ S. at noon, ong. 34° 56′ W., on the 24th April, Good Friday. All well.
>
> "G. Giffard."

The following document, by which it was accompanied, gives the position where it was found :—

"Papel achado dentro, do Francisco Loerado na pancada da mare na praia de Poxim, 7 de Junho de 1832."

The foregoing is a very satisfactory corroboration of the observations of Baron Roussin, on the currents of this coast:—At p. 49 of his '*Pilote du Bresil,*' he says, "D'après une suite presque infinie d'observations sur les courans, nous avons évalué leur vitesse moyenne sur la côte, depuis l'île Sainte Catherine jusqu' à Pernambuco, a 0,6 de mille par heure dans les deux moussons; elle est souvent au-dessous de cette quantité, rarement au dessus, quelquefois nulle."—And respecting their direction, he observes, "Du dix huitième au onzième degré, (of south latitude,) les eaux portent au nord-ouest pendant la mousson au sud."—This has been the case in the present instance. The course and distance between the place where it was thrown into the water, and where it was found, is N. 8° W., (true,) about 500 miles; thus giving it a rate of 10′,4 per day, or nearly half a mile per hour in that direction. This is what Major Rennell terms the drift current, but it is in direct opposition to the Brazil current, which he considers to set southward.

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4. SHOAL IN THE STRAITS OF MALACCA.

WE have received the following extract from the log of the H.C.S. Duke of Sussex, Whitehead commander, Straits of Malacca :—

"On the 17th of August, 1831, standing to the southward and westward, with a light south-easterly breeze, and between two or three miles to windward of the easternmost patch on the south sand, while taking the following bearings: Parcelar Hill, N. 19° W.; Cape Rachado, S. 88° E.; we suddenly shoaled from 24 fathoms to 19 and 13; hove about, and while in stays had a cast of half ten. Sent the cutter away with an officer; pulling in the ship's wake, (then on the other tack,) from no ground we struck 14 fathoms; two boats' lengths to the southward, 9 fathoms; then 5¼, 4; pulled back to 14 fathoms, and skirted the shoal; in 9, 10, and 12 fathoms this patch appeared very small, and steep too. The circumstance of its extending further in to the channel than any sand on the charts, renders it necessary that ships standing to the south-west should in this part of the straits proceed with much caution."

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5. BORNEO AND ROVER SHOALS IN THE MOZAMBIQUE CHANNEL.

WE have been favoured with the following account of a very dangerous shoal by Captain Horsburgh, the hydrographer to the Hon. East India Company; and, although we presented it to our readers with the Index to our first volume, we think it of sufficient importance to repeat here; more especially so, as an English whaler has been recently lost near it. It lies in the northern entrance of the Mozambique Channel, about half-way between the Comoro Islands and the north end of Madagascar.

"Rover, 21st April, 1831.—At 1h. 30m. P.M. discovered a large and dangerous shoal, in lat. 12° 22′ S., long. 46° 19′ 45″ E., extending about ten miles E.S.E. and W.N.W.; four or five miles of which dries at half ebb, and the other parts are covered with high breakers. When the middle part of the shoal bore N. by E. ½ E. about five or six miles, had soundings from 12 to 10, 9, and 8 fathoms sand and rocky ground. From hence we stood to the W. S.W. and made Mayotta, and found our observations correct by the mean of two lunar observations and chronometer."

The following extract of a letter, from the Agent to Lloyd's at the Cape of Good Hope, has been forwarded to the Admiralty by John Bennet, Esq., Secretary to Lloyd's:—

"The *Borneo* whaler, belonging to London, Ross, Master, struck on an unknown coral shoal, in lat. 12° 14′ S., long. 46° 7′ E. on the 22d July, at 10h. 30m. P.M., and every effort to get her off proving ineffectual, the crew took to their boat, and landed at Johanna, from whence they have arrived here, in H.M.S. Isis. The *Borneo* had 1950 barrels of oil, and 7 tons of whalebone on board.

"Cape of Good Hope, 29 Sept. 1832.

The latitude assigned to these shoals by the foregoing authorities, differs from that given to the Firebrass shoal, mentioned by Captain Horsburgh, at page 190 of the first volume of his East India Directory; and it would appear that there are other dangers in the neighbourhood of it, the positions of which seem to be very doubtful. The shoal on which the ship Firebrass struck, in 1682, is doubtful in position, being given in latitude 13° 16′ S., and also in 15° 30′ S.; and it has, moreover, 10 feet water over it; whereas the bank seen by the Rover dries at half-ebb. The bank on which the Devonshire sounded, in 1766, in the same part, is also to the southward of 12° 45′ S. from all of which, we may safely conclude, that these shoals are totally distinct from either; and, as Captain Horsburgh very justly observes, "Ships that pass to the eastward of this island, (Mayotta,) ought to keep a good look-out, as there possibly may be dangers on some of these *doubtful* banks, situated between it and Madagascar, which are not yet ascertained." We consider the loss of the Borneo as a verification of Captain Horsburgh's opinion. Some banks are inserted very nearly in the above positions, in M. D'Apres' chart, published in 1775.

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6. Bristol Channel, and Entrance to the River Perrott.

" *Notice to Mariners.*

" *Trinity-House, London,* 29*th Nov.* 1832.

" Notice is hereby given, That, in conformity with the intention expressed in the advertisement from this House, under date the 23rd ultimo, Leading Lights towards the entrance of the river Perrott, will be exhibited on the evening of Saturday, the 1st of December next, in two New Light Towers, which this Corporation has caused to be erected for that purpose, and for the general advantage of navigation in the Bristol Channel.

"These Towers are situated at some distance to the northward of the present Light-house, and bear from each other S. 71° E. and N. 71° W., distant 1500 feet. Masters of vessels, and other mariners, bound up the river Perrott, are to observe, that these Lights, kept upon that line of bearing, will lead in the best water, between the Gore and Stert sands; and they should be particularly careful, in approaching, to have the Lights in one, before the Flatholm Light is shut in with the west-end of Steepholm Island;—observing, that this last-mentioned Light will be open upon the bearing of N.N.E. ½ E. Vessels may then proceed upwards, with the Lights in one, until the tower of Burnham Church bears S.E. by S., when they may steer to the southward, up Burnham Reach, and come to anchor as heretofore.

"To mariners navigating the Bristol Channel, in the vicinity of these Lights, a bearing of the Upper Light will be found particularly serviceable to clear the Culver Sand and One Fathom Bank.

" *Description of the Lights.*

"The Eastern or Upper Light will burn at an elevation of 91 feet 6 inches above the level of the sea, at high-water spring tides, and the Light therefrom *will intermit*,—its duration being 3½ minutes, (during which space its brilliancy will be visible from N. by W. ½ W. to W. by N.) and the period of its entire obscuration, 30 seconds.

"The Western or Low Light, which will burn at an elevation of 23 feet above the same level, will be shewn *without intermission*, and the brilliancy thereof will be visible from N.W. by W. ½ W. to W. by N.

"The present Light at Burnham will be discontinued, on the exhibition of the Lights above mentioned.

"N.B. All the foregoing bearings are by compass.

"By order, "J. HERBERT, Secretary."

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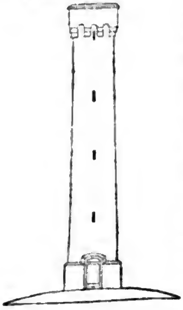
7. NAVIGATION OF THE BRITISH CHANNEL.

" *Notice to Mariners.*

" GRIBBEN HEAD, NEAR FOWEY, *Coast of Cornwall.*

" *Trinity-House, London,* 16*th Nov.*, 1832.

Sketch of the Beacon.



"Notice is hereby given, That, in compliance with the request of numerous shipowners, masters of vessels, and others interested in the navigation of the British Channel, this Corporation has caused a Beacon to be erected upon the point of land called Gribben Head, to the westward of the entrance to the port of Fowey.

"By the erection of this Beacon Tower, which is 85 feet in height, and stands upon an elevation of 257 feet above the level of the sea, the said headland, called the Gribben, is rendered readily distinguishable; and the recurrence of those accidents will be prevented, to which masters of vessels, and other mariners, have heretofore been exposed, by mistaking the same for St. Anthony's Head, at the entrance of Falmouth Harbour, or for any other headland upon that part of the coast.

"By order, "J. HERBERT, Secretary."

8. New Lights of Christiansand and Fehmern.

In our last number we alluded to some new Lights in the Sleeve and Baltic. We have now to present our readers with the following corrected statements of two of them :—

New Light on Fehmern Island.—*Entrance of the Baltic.*

"A new light has been erected on the north-east side of the island of Fehmern, by the orders of the Danish Government.

"It stands on the Oldenburgh Huk, in the vicinity of the dangerous Puttgardens reef.

"Upon it, and at the height of 92 Danish feet (96 English) above the level of the sea, is placed a lamp, which may be seen when the eye is ten feet above the water around the whole island, at the distance of 15 miles, until the land is approached within one to two miles. Within this distance, on any bearing between S. 7° W. and S. 15° E. by compass, the light will then be hid by the hill of Catharinenhof.

"The light consists of six lamps, with reverberators, which are made to turn round by clock-work in three minutes, during which interval a strong light will be seen six times, each light showing itself for about 10 seconds, and disappearing afterwards for 20 seconds, although, when near, the reflection of the lamps will be perceivable between the appearances of the lights.

"The light on Fehmern will be distinguished by its revolving lights from the others in the neighbourhood, which are fixed lights.

"From the lights on Giedserodoe, the south point of Falster, the Fehmern light bears west, 9° north, 25 miles, and from the light upon Fakkebierg, the south end of Langeland, S. 33° E. 23 miles by compass.

"The light on Fehmern will commence burning next month, and will be kept constantly lighted, from Easter to Michaelmas one hour, and from Michaelmas to Easter, one half hour after sunset to sunrise.

"*Copenhagen, October*, 13."

---

9. New Lights at Christiansand.—*Coast of Norway.*

(Translation.)

"As soon as possible after the middle of November next (the date will be advertised at a future period,) a light will appear on Oxoe island, east of Flekkeroe, at the eastern entrance to Christiansand, 135 feet above the surface of the sea.*

"Within a distance of 4 Norway miles, (24,3 nautical,) the light will be seen in clear weather with a steady brightness, during 2 minutes and 55 seconds, at the end of which time it will undergo a short eclipse, succeeded by a steady light, and then another eclipse; after which the light again shows itself for 2 minutes 55 seconds, as before, with a steady light. Between each of the strong lights is an interval of 4 minutes. At a distance of 5 miles, (30,4 nautical,) the strong light is observable. The light will be seen from all points of the compass, and will burn throughout the year; the light-house is white, and serves as a seamark by day.

"In connexion with the light on Oxoe, a harbour light will also be lighted on Oderoe Island, 1 Norway mile (6 nautical miles) distant from Oxoe,

* Allowing these to be Stockholm feet, they would be equal to 131 English.

bearing N.W., ¼ W. The light on Oderoe Island will be seen in clear weather from the lower rigging, bearing N.W., ¾ N. and, by steering this course, and continually keeping Oderoe light in sight, all rocks and shoals will be avoided until within 20 fathoms of the light, when the course must be altered to N.W. b. W. ¼ W. Continuing on the last-mentioned course, steering in betwixt Oderoe Island and Dybingsholmen house, 2 lower lights on Oderoe light-house will be seen, the one after the other. Having passed 5 cables' lengths from this light, a vessel may then anchor in 30 or 40 fathoms.

"The light on Oderoe is 26½ feet (25 English) above the surface of the sea, and is lighted and extinguished at the same time as Oxoe light, with the exception of the last-mentioned two lights, which are not lighted between the 31st of May and 1st of August.

"It is to be observed, that the channel between the shoals near Oxoe and Groningen, where Oderoe light is visible, is three or four cable lengths wide. In the middle of this channel, the light appears most luminous on the course to be steered, viz. N.W. ¾ N. On each side of this line of bearing, the strength of the light diminishes, and at last disappears; in which case, a vessel will be 1½ to 2 cables' lengths from the nearest shoal.

"*Christiania, October* 16."

10. New Light on Douglas Head, Isle of Man.

"A Light-house has been erected upon Douglas Head, in the Isle of Man, and will be lighted on the 21st December, 1832.

"The Light will be stationary, and appear like a star of the first magnitude at the distance of 15 miles.

"The bearings and distances are as follow: from Clayhead, in the said Island, W. by S. ¼ S., 5 miles. From Langness Point, E. by N. 8½ miles.

The Light will not be visible from Langness Point; but, with an offing of 3 miles from that Point the Light will be seen bearing N.E. ¼ E.; and the Calf Lights at the same time bearing N. by W. ¼ W.

"Vessels running for Douglas, between E. by N. ½ N., to W. by S. ½ S., will see the Light at 15 miles' distance.

Isle of Man, 30th November, 1832.

Geographical Collections.

Name of		Lat. South.	Long. West.	Variat East.	Tide.	
Place.	Particular Spot.				H.W. at F. & C.	Direction of Flood, and Rise of Tide.
East Coast of Patagonia.					H. M.	
Bellaco Rock..	Rock	48° 30′ 50″	66° 09′ 25″			
Port St. Julian	Shag Island, in Harbour	49 16 00	67 38 02	22° 17′	10 30	Northward, rises 38 feet, (observed off the River's Mouth.)
,,	Wood's Mount	49 14 00	67 43 34			
,,	Cape Curioso..........	49 11 10	67 34 30			
C.Fran.d'Paulo	Extremity	49 41 18	67 34 30			
Santa Cruz..	Observatory opposite Sea Lion Island	50 06 43	68 25 00	20 54	10 15	33 feet.
,,	Mount Entrance	50 08 30	68 19 10			
,,	Station up the River ..	49 57 30	68 52 55			
,,	,, ,,	50 07 30	69 08 00			
BrokenCliffPk.	Brink	50 14 30	68 31 15		12 15	Northward.
Lion Mount ..	Summit	50 20 00	68 49 30			
Observation Mt	Summit	50 32 35	69 00 40			

VOYAGES AND MARITIME PAPERS.

I.—NOTES ON THE SCHELDE.

THE mouth of the West Schelde lies between the islands of Walcheren, on the north, and Cadsand on the south side, the shortest distance across it being nearly three statute miles. A great many very dangerous sand-banks, extend about 19 miles from the nearest land off the mouth of the Schelde, and render the navigation extremely hazardous, particularly in hazy weather. After a few days of this weather, the mariner frequently finds his ship in shoal water, having been drifted about by the tides, so that he is unable to account for his position, and his only resource is his lead. At about six leagues to the eastward of Ostend, we arrive at the entrance of the river Sluys, on the bank of which, about four miles up, is the strong fortification of the same name, now in possession of the Dutch; the Belgian lines being at West Capel, distant about three miles to the westward of it. On this line of coast are situated the villages of Wendune, Blankenburgh, Heyst, and Knocke; and several distant steeples may be seen in the interior, the most conspicuous being those of the city of Bruges. Few travellers are aware of the benefit of these steeples to mariners. They serve as a guide to them in clear weather, to extricate them from numerous dangers on the coast. The entire face of the country here, with the exception of the sea-coast, is low and flat. Between Ostend and Wendune are a range of sand-hills, the highest of which is called the Spanish Sand-hill; and from thence to Blankenburgh the coast is also low, having dykes to oppose the effects of the North Sea. Proceeding from Blankenburgh to the eastward, the land again rises into hillocks of sand, and continues so until we pass the village of Knocke. Here the sand-hills terminate in a low flat, extending nearly across the mouth of Sluys river to the island of Cadsand, leaving a narrow channel for small vessels to pass up to Sluys. The highest of these sand-hills is between the villages of Heyst and Knocke, and serves as a sea-mark.

From the mouth of Sluys river, at the distance of 9½ miles to the eastward, lies the town and fortification of Flushing, on the south shore of the island of Walcheren. In this route we leave the island of Cadsand on the south, or right hand. The west and north-west sides of this island are bounded by low sand-hills, at the termination of which, to the eastward, is a battery, commanding the passage of the Weilinge channel, to or from Flushing. Large ships must pass within 1½ mile of this battery, and small vessels within two miles of it. Proceeding from thence four miles farther to the eastward along the dykes, we find here and there a low, solitary sand-hill, until we arrive at Weelpen signal-house, surrounded by a few sand-hills, on the north part of Cadsand island.

The island of Cadsand (like the most part of Flanders) is thickly wooded, and the only conspicuous object on it is the steeple of Groede; nevertheless, in some positions, the turrets of the churches, Cadsand, Nieuflich, Breskens, Hoogplaat, and Bierfleit, are seen; the latter being within a fortification of that name.

From the north part of Cadsand island, the distance by water to the city of Antwerp, following the serpentine course of the river, is 55½ miles. The obstacles that endanger its navigation by vessels are many; particularly when both sides of the river are occupied by an enemy. The first and greatest impediment is the frequent shifting of the shoals in the river, and the consequent uncertainty in the depth of its channels. From the shallow nature of the river,

VERSHAVEN
Zonnemaar
E
N
Dreischor
Rengers
Shuys
St. Jansland
Zierikzee
Bruinisse
DUIVELAND
Oosterland
Ouwerkerke
Wanen
St. Annal
Stavenisse
T
St. Ma
Berg
Cattendyk
Wemeldinge
Capelle
Yrseke
B E V E L A N D
Evensdick
Schore
Hansweerd
Gruyningen
Waer
Ossenesse
Welsoorden
Zande
Betonck
Heynsdyck
M
HULSTER AMBACHT
L
Zand
ter Komme
Hulst
AXEL
uldorp
Scale of Nautic Miles
1
2
3
4
5

large ships are obliged to wait tide before they can proceed through the channels already known, (admitting that no alteration has taken place since the last survey was made;) so that this circumstance, and the time that would be required to place buoys on the extremities, or elbows, of the several banks in the route, forms a serious impediment to the navigation of the river, particularly if the latter is to be done in the face of an enemy. The narrowness and intricacy of the channels, from Fort Batz, on the eastern extreme of South Beveland, to Antwerp, is considerable; and, lastly, the batteries opposed to a vessel in her progress up the river, at the angle of every dyke, on each bank, would prove continual sources of annoyance.

From Weelpen signal-house, the coast of Cadsand island trends to the S.E. about eight miles, when it suddenly turns to the S.W. forming with the land near Terneuse a narrow channel, which, by means of a canal, leads to the city of Ghent. This part of the island is exceedingly low, and dyked along the sea face, with the exception of the distance of about 1½ mile to the north-west of the village of Breskens, where there are hillocks of sand, and a strong battery called Fort Napoleon. This fort, and that of Ramekens, as well as the fortifications in and about Flushing, directly opposite, command the mouth of the river; and as the distance across, as before-mentioned, is 2½ geographical miles, ships must pass within 1¼ mile of one or the other of these batteries. The whole country from hence to Antwerp is very level; it is interspersed with villages on both sides the river; the roads between them being bordered with trees. Good water is difficult to be had, owing to the sea oozing through the various sluices over the land. In the year 1809, the water used in our fleet was brought from England in transports; while the soldiers were suffering from the effects of drinking the brackish water of the marshes. Continuing up the river for about eight or nine miles, we arrive at the south-west point of South Beveland, and within three quarters of a mile of the rural little village of Borselen. The turret of the church, and the windmill of this village, may be distinctly seen above the trees. In proceeding up this part of the river, there is sufficient depth of water for the largest ships; but it may be observed at the same time, that, previous to her arrival thus far, a ship must pass over a depth of 26 feet water, or less, through whatever channel she may enter the West Schelde.

In this last route, the principal dangers, as far as shoals are concerned, lie on the side of Cadsand; and an extensive sand-bank, called the Calot, to the northward, is a danger which should be studiously avoided. A ship is obliged to approach near this bank, to keep the proper channel; in doing which she has to receive the fire of Fort Napoleon, in the island of Cadsand; that of Flushing, the Nolle House Battery, a battery between the two latter and Ramekens Fort, in the island of Walcheren. Having passed these, she may proceed up the river as far as Borselen Point, the south-west point of South Beveland. A few guns placed here would rake every ship that advanced; but as the point is steep, such a battery could not long withstand the fire of a ship of war. From Borselen Point, the river takes a serpentine course all the way up to Antwerp; the deepest water in its channels being alternately on each side and in the middle of the river. The navigation is thus rendered very difficult to strangers; and the difficulty arising from it increases from Fort Batz towards Antwerp. Here the channel becomes so contracted, that a large ship, lying at anchor with 80 fathoms of cable out, cannot swing round, and the breadth of the river is not more than 300 feet from bank to bank, at high water.

From Borselen Point to Fort Batz, the distance by water is about 24 miles; but having advanced the first five miles, we arrive abreast of the fortification of Terneuse, on the left bank of the river. A ship is obliged to pass within three quarters of a mile of this fort; but as the tide runs strong here, with the flood tide and fair wind, she would run past this fort before the enemy can reload a gun after being discharged. From Terneuse, until she arrives within the reach of the guns at Fort Batz, there are none other batteries to annoy a ship; but there are two places in this distance, on the right bank of the river, in which, if batteries were constructed, they would considerably annoy shipping going up or down; and these are, Baerlandt Point, and abreast of the village of Waerden, on South Beveland. On both sides the river, the land has a similar appearance, being very low and flat, with dykes along its banks; the eye, however, is relieved from this monotony by the gentle rising of many little villages, surrounded with trees; and the lofty spires of several handsome churches, may be seen at the distance of a few miles round. The most conspicuous are those of Antwerp, Stabrock, and Sandvliet, on the right bank; and Hensdyk, Hulst, and Verrebroeck, on the left bank of the river.

We shall close these remarks with a short account of the Schelde, from the Tour through South Holland; a useful little work, recently published by Mr. Murray.

The side of the island of Walcheren, which faces the sea, is defended against the encroachments of that element by one continued wall or ridge of high sand-hills, interrupted only at West Capel, where an artificial dyke has been raised to the height, it is said, of thirty feet, and defended in a very ingenious and extraordinary manner. This artificial barrier is of so much importance, that, on its stability, the safety of the whole island may be said to depend.

At the point of the island where Flushing is situated, a strong wall of masonry protects the town against the sea; and the side facing the Schelde is embanked with great care, and its repair evidently kept up at an enormous expense. Embankments or dykes of the same kind are carried along both banks of the river; and at the base of each is thrown out a barrier of stones and stakes, to protect the higher ramparts of earth; and these again are covered with great care and ingenuity with a kind of thatch, consisting of bean-stubble or straw. The stones at the base are sometimes thrown into a kind of wicker or basket-work of withy twigs, and the whole kept together by ropes made of the same material, and interwoven with rushes; and where the current or the tide sets strongest, rows of stakes or poles are driven into the sand, to act as breakwaters for the protection of the base of the sloping bank, which receives a further consistence by being grown over with grass, on the gently sloping sides of which very fine cattle may be seen grazing, many of which are handsomely spotted.

These dykes, and their supporting embankments, are seen in great perfection along the shores of South Beveland, the island next to Walcheren, and one of the most beautiful and fertile territories of Holland; that is to say, beautiful for its cultivation, and its fertility in all kinds of grain, madder, pulse, hemp, rape, and flax; in its abundance of orchards of apples, pears, cherries, and plums; in the number of its villages, situated in the midst of trees, but, to the navigator of the river, known only to exist from the frequent spires of churches that are seen to rise in every direction out of the woods. Even in those villages that are close to the banks, seldom is any part of the houses visible, except the chimneys and the tiled roofs; but a church-spire in the midst of trees, and a windmill erected on the bank or some artificial mount, the better to catch the breeze, are sure indications of the co-existence of a little hamlet with those conspicuous objects.

In various parts of the shores of the river, in addition to the regular embankments, are small breakwaters of stonework, thrown out at right angles into the stream, intended to guard the dykes against the shock of floating timber or vessels, but more particularly against the masses of ice which float down in the winter season. These stones are all brought hither, by water conveyance, from the neighbourhood of Brussels, as not a pebble of any description is to be found in any of the Zealand Islands, nor in the northern provinces of Belgium. The general surface, in fact, on both sides the river, is below the level of the high-water mark, so that a vast extent of fertile country has actually been rescued from the sea by human labour and ingenuity. It is evident, therefore, that unless due precautions were taken against the breaking in of the sea, which not unfrequently happens, the whole country would be subject to inundation, and revert to its ancient state of useless sterility—alternately a sandy marsh and a sheet of water.

This is, in fact, what has actually happened to the eastern side of this very Island of South Beveland, where, at low water, there is a vast extent of sand, which the Dutch have named 'Verdrunken land,' or land swallowed up by the sea. To obviate a disaster of such fatal import, innumerable inland dykes are constructed in every direction, not only to mark, as they sometimes do, the division of property, but also to afford additional barriers to the waters, so that if the first barrier or sea-dyke should give way, a second and a third may be found to resist the further ravages of the flood. At the commencement of the present century, however, Walcheren was inundated by a breach of the sea at West Capel, and the water is said to have stood as high as the roofs of the houses of Middelburg, which fine city was saved from utter destruction only by the strength of its walls. This event is commemorated by an inscription on a stone.

In all these banks several sluices are constructed, by means of which the inhabitants have not only the power of letting out the water from the sands, but also of letting in that of the river or the sea, in the event of an enemy invading the country; and by this desperate measure, to make it impossible for him to remain; but this is an advantage gained only at the expense of an infliction of general misery and distress, amounting very nearly to complete ruin.

The master of our vessel was well acquainted with every part of the river, but we were compelled to take a Dutch pilot, for the sake, of course, of paying him his fee. We were desirous, in proceding, to keep close to the northern channel on the Dutch side, along the shores of Beveland, but the pilot made several objections, which our master knew to be perfectly frivolous; his only avowed reason, on being pressed, was, that the king did not like it—and as in such cases, when *stat pro ratione voluntas*, and when we are told that *le roi le veut*, it would be folly to resist, we stood over to Terneuse, on the southern side. From this place a fine canal has recently been opened the whole way to Ghent, of the depth of sixteen feet, which, while it admits ships of very considerable burthen, acts as a drain to the surrounding country, through which it passes. At Terneuse it communicates with the Schelde, by two separate sluices or locks. This water communication is of the greatest importance, both to Brabant and Holland, by opening a direct intercourse between Antwerp and other principal towns of Belgium, and to the latter country, through various channels of communication, with Dort and Rotterdam.

In proceeding up the Schelde, it is impossible not to be struck with the simple means by which the Dutch have succeeded in producing the same effect, though, perhaps, in a smaller degree, for which in England we launch out into the most extravagant expense. Nothing can exceed the economy practised in the construction of their flood-gates, and the wooden piers in which their sluices are placed; a species of hydraulics, that with us are generally formed of the most costly workmanship in masonry. Having no stone in this country, but what must come to them from the banks of the Meuse or the

Rhine, necessity has driven them to the use of other materials, and its place is efficiently supplied by the less costly, though less durable, article of wood.

On the muddy shores and the sand-banks of the Schelde, left bare at low water, whole shoals of seals may generally be seen in different attitudes, some playing about and wallowing in the mud, while others are standing upright, as if watching to give notice to their companions of any danger that may be approaching. These creatures are possessed of a high degree of cunning, and not easily to be caught napping; the usual mode of taking them is by setting a long range of nets below the surface of the high-water line, so as to admit them freely at that time of tide to the shores or banks of the river; over which nets, as the water falls, they are unable to pass, and are thus caught. In the same manner the inhabitants place rows of twigs, with nets between them, the more readily to catch various kinds of fish, which by first encountering the difficulty of passing through the twigs, generally fall into the nets between them.

The distance from Flushing to Antwerp is reckoned, by the bending of the river, to be sixty-two miles, which our little yacht effected in five hours and a half, and would with ease have done it in five hours, had the wind not failed us in the narrow part of the river, just above Lillo. The appearance of the ancient city of Antwerp becomes here an interesting object, and the more imposing the nearer we approach it along the last reach of the Schelde; nor will the traveller feel any disappointment on his arrival before this great commercial port of the Netherlands.

At the same time it must be confessed there was nothing on this noble river, either in our progress up it, or before the city, that conveyed any impression of an active or extensive commerce. In sailing up or down the Thames, or in approaching London within four or five miles—in the first case, the multitude of shipping, of all descriptions, from the largest Indiaman to the deep-laden barge, scarcely emerging from the water, crossing and recrossing each other in every possible direction—in the second, those lying in close contact, tier after tier, for several miles below the first bridge of the metropolis, afford indications not to be mistaken of the commercial wealth and prosperity of London. But the Schelde, when we ascended it, was a vacant river; we neither met nor overtook a single sail, and with the exception of some ten or twelve small vessels, mostly brigs, except two or three American ships, there was little appearance of trade along the common quay of Antwerp. But a great number of vessels were lying in the small harbours that branch out from the river, and in the two large basins.

Antwerp, however, is a fine old city. It is impossible to enter through an ancient gateway into its narrow streets, bounded by lofty houses, with their high gable ends or pediments of several stories of windows, and ascending by steps on each side to a point, without being attracted by their grotesque, but, at the same time, picturesque appearance. Indeed their novel and fanciful shapes are much more attractive than the more recent and wider streets, with their more spacious houses, many of which are not inferior to any that are met with in London.

The greatest blow which the prosperity of this city received was in consequence of the treaty by which the navigation of the magnificent river, on the right bank of which it is situated, was prohibited. It is said that Antwerp before this contained not fewer than two hundred thousand inhabitants, and had sometimes two thousand ships and vessels lying in the river, and its harbours and its basins. The former are now reduced to less than sixty thousand, and the latter to at most two hundred. The town had before this treaty been sacked and set on fire by the infamous Alva, when six or seven thousand of its inhabitants are said to have perished: and the third, and last time, that its prosperity suffered a severe blow, was occasioned by the overthrow of Buonaparte, when his grand design of making Antwerp the greatest naval arsenal in the north of Europe fell with its projector. His plans for this purpose were undertaken on an immense scale; but they were by no means deserving those extravagant encomiums that were bestowed on them while in their progress. The two basins are undoubtedly planned with great skill, and executed with excellent workmanship. They are conveniently entered from the river, well protected by the guns of the citadel, communicate with each other by a stout pair of iron gates, and another pair connects them with the river. For the security of shipping in the winter months, these basins are admirably adapted; and the old East India House, a great quadrangular building, which stands immediately between them, is well situated for the reception of merchandise or naval stores; but they are mere basins, possessing no conveniences whatever for the building or repairs of ships. As commercial docks they are of considerable importance to the town, and on that account solely they escaped demolition, when the dockyard, which was higher up the river, was destroyed.

This demolition of the naval establishment was carried into effect in virtue of the Fifteenth Article of the Definitive Treaty of Peace, signed at Paris the 30th May, 1814. By this article, all the ships of war then at Antwerp afloat, and those on the stocks, were—after those actually belonging to Holland, prior to its incorporation in the French empire, had been given up to the Prince of Orange—to be divided, so that his most Christian Majesty should have two-thirds, and the Dutch, in trust for the Allied Powers, the remaining third; all those on the stocks to be broken up within a specified time, and the slips, docks, and every thing belonging to the naval arsenal, broken up and destroyed. Commissioners were appointed for this partition and demolition, amongst whom was the comptroller and the surveyor of the British navy. The division was as follows, viz:

To the French.—12 sail of the line; 4 frigates; 2 brigs—besides 9 sail of the line, and 2 frigates on the stocks, to be broken up.

To the Dutch.—3 sail of the line, 5 frigates; and, in trust, 7 sail of the line.

Total.—31 sail of the line, 11 frigates, 2 brigs.

The ordnance stores, guns, and ammunition, were also divided, as well as the timber and other naval stores, the estimated value of which exceeded two millions sterling.

Thus perished the dockyards of Antwerp, which Buonaparte had taken so much pains and spent so much money to complete, and which had occasioned so much uneasiness to this country.

The work of destruction being finished, it next became a question as to the demolition of the two fine basins, which, however, would have been no easy matter; at least to such an extent as would have rendered them irreparable. It was calculated that the larger of the two was capable of containing thirty-four sail of the line, and the smaller one, fourteen. The representations of the citizens, however, in favour of their being suffered to remain uninjured, as the receptacles of their merchant shipping, and of their vast utility in protecting them in the winter season against the ice, (which, it seems, floats about in such large masses, that, heretofore, those of large dimensions were generally under the necessity of going up to the anchorage in the Rupel branch of the river, seven miles above Antwerp,) prevailed; and it was conceded to the town, that these two fine basins should not be destroyed.

All the fortifications, the storehouses, the smitheries, rope-house, and other buildings connected with the dockyard establishment, were destroyed, but the citadel was suffered to remain untouched. Since the establishment of Antwerp as a naval port by Buonaparte, nineteen sail of the line and thirteen frigates had been put upon the stocks; and between four and five thousand artificers of different descriptions were employed in the dockyards. He had computed, a very little time before his fall, that ten sail of the line might be launched every year. It was boasted of, as a great feat, that a thirty-six gun frigate had been completely finished in one month, with the assistance of the galley-slaves to saw the timber. The artificers, for the most part, were soldiers, and their pay was made up to three francs per day. The timber was generally brought by water from the neighbourhood of Tournay and Genappe; each piece was fashioned in the forest to the shape and purpose for which it was intended. The cannon and heavy iron work were sent from the founderies of Liege. To make this naval arsenal complete, it was intended to construct dry docks at the head of the inner or large basin, the wall of which, at that part, still remains unfinished, or rather, that line of the basin was originally left without masonry. The rise and fall of the tide, which is from fourteen to sixteen feet, is highly favourable for the construction of dry docks, of which, convenient as they are, and considered with us as indispensable, there is but one or two, at the most, in all Holland; the vast expense, from the nature of the soil, and the total want of stone and other material in that country, having probably deterred them from such undertakings. It is supposed that a dock for the reception of a seventy-four gun ship could not be constructed, in any part of Holland, or even at Antwerp, for so little as one hundred thousand pounds.

The masonry of the two basins, here alluded to, is very fine, the walls being five feet thick, exclusive of the binders. The whole of the work executed at Antwerp by the French is said to have cost them two millions sterling.

The great object of these two basins was the security of the fleet against the floating masses of ice in the river, during the winter, where it is utterly impracticable for large ships, such as those of the line, to remain in anything like security.

Before they were ready for the admission of the ships that had been built, we understood that twelve sail of the line were sent into winter-quarters in the Rupel branch of the river, where, by due precautions of stockades, &c. they escaped without much damage. But no part of the Schelde affords safe anchorage for large vessels in the winter season.

Even the roadstead of Flushing is at all times a wild, exposed anchorage for ships, being open entirely to the North Sea, which, in bad weather, rolls in with great impetuosity. Vast sums of money have been expended at that port to render the defensive works, as they thought, impregnable. The magnitude of our last expedition, however, alarmed them; and it is said that no less than five mines were laid, to spring the dykes and inundate the place, if they found it untenable. Fortunately, however, for the people of Flushing, we found it more convenient to seek for shelter in the Roompot, and content ourselves with the possession of the agreeable capital of the island, Middelburg, which was assailed and taken from another quarter. Flushing, however, did not entirely escape; and the inhabitants say that the mischief done to them, by the English, was not made good at a less expense than twenty-four millions of francs, or about a million sterling; which, in its present desolate and neglected condition, may be considered about the purchase-money of the fee-simple of the town. Still it was fortunate to have escaped with so little damage; for when the bombardment took place, about one hundred and twenty houses were set on fire; and, on the evacuation of the island, all the public works of Flushing, the arsenal, the basin, the ships of war, the careening wharf and pits, and the store-houses in the dockyard, were either blown up or burnt, or otherwise destroyed. The Dutch were ultimately, in some degree, avenged of this work of destruction, by the dreadful havoc which the Walcheren fever made among our officers and troops.

The Schelde, it must be admitted, is a magnificent river, and capable of receiving commodious naval establishments in various parts of its course. Terneuse, indeed, on its left bank, has been considered as preferable to Antwerp, in many points of view, for a naval arsenal; and, among others, on account of its proximity to the mouth of the river, and of the depth of water, which is sufficient to admit of ships of the largest size to lie there with all their guns and stores on board, ready at any moment to put to sea, which is not the case with regard to Antwerp. Buonaparte was fully aware of this advantage, and had some intention of removing the naval establishment from Antwerp to Terneuse. A plan to this effect was proposed, which he is said to have seized with eagerness; it contained, among other things, a basin that would hold sixty sail of the line, from whence they might put to sea at once, fully equipped in every respect.

II.—The Transit Instrument.

To the Editor of the Nautical Magazine.

Mr. Editor,

In the year 1821, being in company with the late Rev. Fearon Fellows, previous to his departure as astronomer to the Cape of Good Hope, he proposed a question to me, confessing at the same time his doubt, whether (for want of data) any solution could be given. In the course of a few hours I gave him an answer, which he deemed satisfactory, and advised me to publish, in some periodical work. The subject, however, rested with me in silence till the other day, when I recalled it to my memory; and should you think it worthy of a corner in your Magazine, it is quite at your service.—I am, Sir, &c.

A Constant Reader.

Environs of London, 17th November, 1832.

Question.

Can a transit instrument be placed in the *meridian*, at a place under the *equator*, without the assistance of a *timepiece*, or of any *instrument for measuring angles?*

Answer.

Let the transit instrument have its axis perforated, and at one end of the axis or pivot let an object glass (of the focal length of the axis) be inserted, and let the other pivot be furnished with an eye-tube, having a wire capable of adjustment, and set in a vertical position, when the instrument is looking towards the horizon; consequently the axis is itself a telescope, placed nearly at right angles to the transit telescope.

Let two temporary piers be erected, as nearly as can be estimated, in a north and south position, with the Y^s capable of sufficient adjustment, and place the instrument thereon; it will pass nearly through the east and west points of the horizon. In this position adjust the transit telescope for collimation in the usual way, by reversing the axis, and bisecting a distant mark. Again, by turning the object end of the transit telescope, first to the east and then to the west horizon, (which is in effect reversing the *axis telescope*,) the collimation of the axis telescope can be adjusted by the aid of a distant mark to the north or south; and now the optical axis of these two telescopes will be accurately at right angles with each other.

After levelling the axis very carefully, let the object end be directed to the east, and a star looked for in the field of the transit telescope; and as a star might not be found to fall exactly on any of the vertical wires, the eye-piece should be furnished with a micrometer wire, which might be brought to bisect any star within the field. As the star continues to rise in altitude, it will evidently keep on the wire, if the axis of the instrument be in the true meridian; but if the star recedes from the wire in the progress of rising, the axis will require adjustment in azimuth, which is readily effected. Thus the transit telescope may be made to describe, with very little trouble, the equinoctial with great accuracy, especially if two or three stars be observed from the east to the west horizon. Two distant marks in the true east and west points of the horizon may also be set up; while the axis telescope, which must point at the same time to the north or south mark, will enable us to set up a distant one in the true meridian; and by reversing the axis, another mark may be set in the true meridian, in the opposite direction to the former; and thus four marks will be obtained in the true cardinal points of the horizon. The temporary piers may then be removed, and east and west piers substituted, on which the instrument may be placed, and brought by the aid of the meridian mark as nearly into the true meridian as mechanical means can effect.

Should the instrument be furnished with an iron stand, or any stand capable of moving in azimuth, the temporary piers are not required.

I may remark, that the *axis telescope* would be of great use in other respects, viz., for examining the form of the pivots, for establishing the transit in the meridian by means of an east or west mark, when local circumstances do not allow of one to the north or south, and, finally, for placing the portable transit exactly and at once in the prime vertical, which is required for Bessel's mode of finding the latitude by the transit. I propose, in some following number, to give the demonstration *of this most accurate mode of finding the latitude by a portable instrument.*

III.—ON THE ORGANIZATION OF THE CREWS OF THE FRENCH MARINE.—*From the Annales Maritimes.*

IN consequence of the mode of manning ships in the French navy, as established in 1829, not being found to work well, *M. Le Comte de Rigny, Minister de Marine,* suggested various alterations, which were approved by an *Ordonnance du Roi*, bearing date 1st of March, 1832;—the chief of these alterations, and a table shewing the composition of the crews of the French marine, we have extracted from the *Annales Maritimes,* feeling assured, they will interest many of our readers.

1st. The whole corps marine will continue to be divided into five divisions, as before—two being of the first class, and three of the second division.

1st. Stationed at	Brest, of	50	companies.
2d.	Toulon, .	50	. . .
3d.	Rochefort,	8	. . .
4th.	L'Orient, .	6	. . .
5th.	Cherbourg,	6	. . .

comprising a force of 120 permanent companies of 103 each, or 12,360 men.

2d. Each division will be composed of superior officers (*ètat-major*), and petty officers (*petit ètat-major*).

Of as many permanent companies of 103 men each, as indicated in the following table.
Of provisional companies.
Of a company of boys.

After enumerating various articles of local and o. minor importance, the 18th article provides—

That at each division there shall be a school for elementary mathematics, applicable to navigation; for the outlines of drawing; for reading, writing, and arithmetic; for fencing and swimming; for the instruction of petty officers, &c. *gratis*.

Of the permanent companies, we are told, that each will be divided into two sections of 52 and 51 respectively; the petty officers will be subdivided into a stationary and sea-going party; the provisional companies will be of two sorts, one of 160 men, composed of volunteers and recruits from the departments; the other, which will vary in force according to circumstances, will be composed of sailors raised by the *inscription maritime*.

The company of boys will consist of 192 in number, admitted from twelve to fourteen years of age; and, after having served to the age of sixteen, will, if they wish it, be entitled to the rating of *apprentis marins*.

Another great change in the command of ships is, the admission of marine artillery as part complement, at the rate of twenty-four men to each first-rate ship.

The *ordonnance* farther gives special instructions for the constant practice of the sailors at the guns while on shore, as well as embarked,* and a scale of rewards is instituted, which cannot fail to stimulate men to exertion.

Thus, when a ship is ordered to be commissioned, the Minister of Marine appoints the captain and other officers, not attached to companies; orders the maritime *Préfet* at the division, to embark so many of the permanent companies, so many of the provisional, and a certain number of boys; thus a ship is manned in twenty-four-hours after the order is issued, which, in emergencies, must more than counterbalance the disadvantage of a captain not being allowed to select his own crew.

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* A first-rate of 126 guns in the French navy has 1089 men; 900 is the complement of a British first-rate.

TABLE OF THE OFFICERS AND CREWS OF FRENCH

RANK AND RATINGS.		SHIPS OF THE LINE.											
		120			100			90			82		
		Company 6½	Comp. Peace.	Comp. War.	Company 6	Comp. Peace.	Comp. War.	Company 5	Comp. Peace.	Comp. War.	Company 4	Comp. Peace.	Comp. War.
Officers.	Captain (de vaisseau)	.	1	1	.	1	1	.	1	1	.	1	1
	Do. (de frégate)	.	.	.	.	.	.	.	.	.	.	.	.
	Commander	.	1	1	.	1	1	.	1	1	.	1	1
	Lieutenant (de vaisseau)	6	.	.	6	.	.	5	.	.	4	.	.
	Do. (de frégate)	7	.	.	6	.	.	5	.	.	4	.	.
	Purser	.	1	.	.	1	1	.	1	1	.	1	1
	Chief Surgeon	.	1	.	.	1	1	.	1	1	.	1	1
	Midshipmen	13	.	.	12	.	.	10	.	.	8	2	2
	2d Surgeon	.	2	2	.	1	2	.	1	2	.	1	2
	Assistant-Surgeon	.	2	3	.	2	2	.	2	2	.	2	2
	Dispenser	.	.	1	.	.	.	.	.	.	.	.	.
Warrant Officers.	Boatswain	.	1	1	.	1	1	.	1	1	.	1	1
	Gunner	.	1	1	.	1	1	.	1	1	.	1	1
	Pilot	.	1	1	.	1	1	.	1	1	.	1	1
	Master at Arms	.	1	1	.	1	1	.	1	1	.	1	1
	Carpenter	.	1	1	.	1	1	.	1	1	.	1	1
	Master Caulker	.	1	1	.	1	1	.	1	1	.	1	1
	Master Sail-maker	.	1	1	.	1	1	.	1	1	.	1	1
	Master Smith Armourer	.	1	1	.	1	1	.	1	1	.	1	1
1st Class Petty Officers.	Boatswain's Mate	6	.	.	6	.	.	5	.	.	4	.	.
	Gunner's Mate	7	.	.	6	.	.	5	.	.	4	.	1
	Quarter-Master	3	.	.	3	.	.	3	.	.	2	.	.
	Carpenter's Mate	3	.	.	3	.	.	2	.	.	2	.	.
	Caulker's Mate	3	.	.	3	.	.	3	.	.	2	.	.
	Sail-maker's Mate	4	.	.	3	.	.	2	.	.	2	.	.
	Armourer's Mate	.	1	2	.	1	1	.	1	1	.	.	.
2d Class Petty Officers.	Riggers	20	.	4	18	.	2	15	.	3	12	.	3
	Gunner's Crew	19	.	4	18	.	.	15	.	1	12	2	3
	Quarter-Master	4	.	1	3	.	1	2	1	2	2	1	2
	Carpenter's Crew	3	.	.	3	.	.	3	.	.	2	.	.
	Caulker's Crew	3	.	.	3	.	.	2	.	.	2	.	.
	Sail-maker's Crew	3	.	.	3	.	.	3	.	.	2	.	.
	Quarter-Master Serjeant*	7	.	.	6	.	.	5	.	.	4	.	.
Sailors.	Able Seamen	111	17	59	102	10	40	85	14	40	68	13	34
	Ordinary Seamen	110	18	60	102	10	40	85	14	40	68	13	34
	Landsmen	169	49	188	156	28	120	130	42	122	104	38	104
	Apprentices	169	.	.	156	.	.	130	.	.	104	.	.
Artillery.	Serjeant	.	1	1	.	1	1	.	.	.	.	1	1
	Corporal	.	2	2	.	2	2	.	.	.	.	2	2
	Gunners	.	21	21	.	21	21	.	.	.	.	21	21
Boys.		.	39	39	.	36	36	.	.	.	.	24	24
Superintendance of Provisions.	Chief Clerk	.	1	1	.	1	1	.	.	.	.	1	1
	2d Clerk	.	2	2	.	2	2	.	.	.	.	1	1
	Steward	.	2	3	.	2	2	.	.	.	.	1	2
	Coopers	.	1	1	.	1	1	.	.	.	.	1	1
	Bakers	.	1	1	.	1	1	.	.	.	.	1	1
	Cooks	.	2	3	.	2	2	.	.	.	.	2	2
Various Services.	Magazine Men	.	1	1	.	1	1	.	.	.	.	1	1
	Barbers	.	1	1	.	1	1	.	.	.	.	1	1
	Sick bay Men	.	1	1	.	1	1	.	.	.	.	1	1
	Domestics	.	6	6	.	6	6	.	.	.	.	6	6
		670	182	419	618	141	298	515	157	296	412	157	260
Effective Total.	Peace Establishment	852			759			672			563		
	War Establishment	1089			916			811			673		

* Quartries Maitres de Manœuvre.

The "*Fourrier*" has charge of all writings and accounts, and answers to Captain's Clerk, in the British Service.

LINE-OF-BATTLE SHIPS, FRIGATES, AND OTHER VESSELS.

FRIGATES.									CORVETTES.											
1st Class.			2d Class.			3d Class.			With Upper Decks.						Flush.			Dispatch Vessels.		
Company 3½	Comp.		Company 3	Comp.		Company 2	Comp.		32			28			Company 1	Comp.		Company ½	Comp.	
	Peace.	War.		Peace.	War.		Peace.	War.	Company 1½	Comp.		Comyany 1	Comp.			Peace.	War.		Peace.	War.
										Peace.	War.		Peace.	War.						
.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	1	1	.	1	1	.	1	1	.	1	1	.	.	.	.	.	.
.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	3	.	.	2	.	.	1	1	1	1	1	1	1	1	1	1	.	.
4	.	.	3	.	.	2	1	1	2	1	1	1	2	2	1	2	2	.	3	3
.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	1	1
.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	1	1
7	1	1	6	2	2	4	2	2	3	1	1	2	1	1	2	1	1	1	2	2
.	1	1	.	1	1	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.
.	1	2	.	1	2	.	1	2	.	1	2	.	1	2	.	1	1	.	1	1
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	.	.	.	.	.
.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	.	.	.	.	.
.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	.	.	.	.	.
.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	1	1
.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	.	.
.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	.	.
.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	.	.
.	1	1	.	1	1	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	3	.	.	2	.	1	2	.	.	1	1	1	1	1	1	1	1	1
4	.	.	3	.	2	2	.	1	1	.	.	1	.	.	1	1	1	.	1	1
2	.	.	2	.	.	1	.	.	1	.	.	.	.	.	1	.	.	.	1	1
2	.	.	1	.	.	1	.	.	.	.	.	1	.	.	.	.	.	.	1	1
2	.	.	2	.	.	1	.	.	1	.	.	.	.	.	1	.	.	.	1	1
1	.	.	1	.	.	1	.	.	1	.	.	1	.	.	.	.	.	1	.	.
.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	1	1
11	.	.	9	.	1	6	.	1	4	1	2	3	1	2	3	.	1	1	2	2
10	.	.	9	1	1	6	1	1	5	.	.	3	1	1	3	1	1	2	1	1
2	.	.	1	.	1	1	1	1	.	1	1	1	1	1	.	2	2	.	2	2
2	.	.	2	.	.	1	.	.	1	.	.	.	.	.	1	.	.	.	1	1
1	.	.	1	.	.	1	.	.	1	.	.	1	.	.	.	.	.	1	.	.
2	.	.	2	.	.	1	.	.	1	.	.	.	.	.	1	.	.	.	1	1
4	.	.	3	.	.	2	.	.	2	.	.	1	.	.	1	.	.	1	.	.
59	1	15	51	1	13	34	.	10	25	.	5	17	4	10	17	.	3	8	.	2
60	.	14	51	1	12	34	.	10	26	.	4	17	4	10	17	.	3	9	.	1
91	6	44	78	4	36	52	.	32	39	.	15	26	14	32	26	.	10	13	.	7
91	.	.	78	.	.	52	.	.	39	.	.	26	.	.	26	.	.	13	.	.
.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	2	2	.	2	2	.	2	2	.	1	1	.	1	1	.	1	1	.	1	1
.	21	21	.	14	14	.	14	14	.	7	7	.	7	7	.	7	7	.	7	7
.	21	21	.	18	18	.	15	15	.	12	12	.	12	12	.	10	10	.	8	8
.	1	1	.	1	1	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.
.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	1	1
.	1	2	.	1	2	.	1	1	.	1	1	.	1	1	.	1	1	.	1	1
.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	1	1
.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	1	1
.	1	2	.	1	2	.	1	1	.	1	1	.	1	1	.	1	1	.	1	1
.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	1	1	.	1	1
.	1	1	.	1	1	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.
.	1	1	.	1	1	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.
.	6	6	.	5	5	.	5	5	.	5	5	.	4	4	.	4	4	.	3	3
361	85	152	309	71	132	206	64	121	155	48	74	103	72	104	103	46	63	52	48	53
	444 513			380 441			270 327			293 229			175 207			149 166			100 110	

N.B. Each Company consists of 103 Men, divided into two Sections of fifty-three and fifty-two respectively.

TABLE OF THE OFFICERS AND CREWS OF FRENCH

RANK AND RATINGS.		BRIGS.								
		20			18			16		
		Company ½	Comp.		Company ½	Comp.		Company ½	Comp.	
			Peace.	War.		Peace.	War.		Peace.	War.
Officers.	Captain (de vaisseau)	.	.	.	.	.	.	.	.	.
	Do. (de frégate)	.	.	.	.	.	.	.	.	.
	Commander	.	1	1	.	1	1	.	1	1
	Lieutenant (de vaisseau)	1	.	.	1	.	.	.	1	1
	Do. (de frégate)	.	3	3	.	3	3	1	1	1
	Purser	.	1	1	.	1	1	.	1	1
	Chief Surgeon	.	1	1	.	1	1	.	1	1
	Midshipmen	1	2	2	.	2	2	1	2	2
	2d Surgeon	.	.	.	.	.	.	.	.	.
	Assistant-Surgeon	.	1	1	.	1	1	.	1	1
	Dispenser	.	.	.	.	.	.	.	.	.
Warrant Officers.	Boatswain	.	.	.	.	.	.	.	.	.
	Gunner	.	.	.	.	.	.	.	.	.
	Pilot	.	.	.	.	.	.	.	.	.
	Master at Arms	.	1	1	.	1	1	.	1	1
	Carpenter	.	.	.	.	.	.	.	.	.
	Master Caulker	.	.	.	.	.	.	.	.	.
	Master Sail-maker	.	.	.	.	.	.	.	.	.
	Master Smith Armourer	.	.	.	.	.	.	.	.	.
1st Class Petty Officers.	Boatswain's Mate	1	1	1	.	2	2	.	1	1
	Gunner's Mate	.	1	2	1	.	.	1	.	.
	Quarter-Master	1	.	.	.	1	1	.	1	1
	Carpenter's Mate	.	1	1	1	.	.	.	1	1
	Caulker's Mate	.	1	1	.	1	1	1	.	.
	Sail-maker's Mate	.	1	1	.	1	1	.	1	1
	Armourer's Mate	.	1	1	.	1	1	.	1	1
2d Class Petty Officers.	Riggers	1	2	2	2	1	1	2	1	1
	Gunner's Crew	2	1	1	1	2	2	1	2	3
	Quarter-Master	.	2	2	1	.	.	.	1	1
	Carpenter's Crew	.	1	1	.	1	1	1	.	.
	Caulker's Crew	.	1	1	.	1	1	.	1	1
	Sail-maker's Crew	1	.	.	.	1	1	1	1	1
	Quarter-Master Serjeant*	1	.	.	1	.	.	1	.	.
Sailors.	Able Seamen	8	.	2	9	.	1	9	.	.
	Ordinary Seamen	9	.	1	8	.	2	8	.	1
	Landsmen	13	.	7	13	.	6	13	.	4
	Apprentices	13	.	.	13	.	.	13	.	.
Artillery.	Serjeant	.	.	.	.	.	.	.	.	.
	Corporal	.	1	1	.	1	1	.	1	1
	Gunners	.	7	7	.	7	7	.	7	7
Boys.		.	9	9	.	8	8	.	7	7
Superintendance of Provisions.	Chief Clerk	.	.	.	.	.	.	.	.	.
	2d Clerk	.	1	1	.	1	1	.	1	1
	Steward	.	1	1	.	1	1	.	1	1
	Coopers	.	1	1	.	.	.	.	.	.
	Bakers	.	1	1	.	1	1	.	1	1
	Cooks	.	1	1	.	1	1	.	1	1
Various Services.	Magazine Men	.	1	1	.	1	1	.	1	1
	Barbers	.	.	.	.	.	.	.	.	.
	Sick bay Men	.	.	.	.	.	.	.	.	.
	Domestics	.	4	4	.	3	3	.	3	3
		52	50	61	52	46	55	52	43	49
Effective Total.	Peace Establishment	102			98			95		
	War Establishment	113			107			101		

* Quartries Maitres de Manœuvre.

The "*Fourrier*" has charge of all writings and accounts, and answers to Captain's Clerk, in the British Service.

LINE-OF-BATTLE SHIPS, FRIGATES, AND OTHER VESSELS.

PACKET BRIGS OF 14 GUNS.			STORE SHIP OF 800 TONS.			TROOP SHIPS FROM 4 TO 500 TONS.			BRIGS, 8 OR 10 GUNS.		GUN BRIGS OF 8 GUNS.		SCHOONERS, 6 OR 8 GUNS.		TROOP SHIPS, &c.					
															350 to 400 tons.		250 to 300 tons.		200, and under.	
Company ½	Comp. Peace.	Comp. War.	Company 1	Comp. Peace.	Comp. War.	Company ½	Comp. Peace.	Comp. War.	Peace.	War.	Peace.	War.	Peace.	War.	Peace.	War.	Peace.	War.	War.	Peace.
	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
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.	1	1	.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.
.	1	1	1	.	.	1	.	.	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	3	3	.	2	2	2	2	1	1	2	2	3	3	2	2	2	2
.	1	1	.	1	1	.	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.	1	1	.	1	1	.	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	2	2	2	1	1	1	1	1	2	2	1	1	2	2	2	2	2	2	1	1
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	1	1	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
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.	1	1	.	1	1	.	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
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1	.	.	1	.	.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.	1	1	1	.	.	.	1	1	1	1	1	1	1	1	1	1	1	1	.	.
.	1	1	1	.	.	1	.	.	1	1	.	.	.	.	1	1	1	1	.	.
.	1	1	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	1	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	1	1	.	1	1	.	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	2	2	3	1	1	1	2	2	3	3	2	2	2	2	3	3	2	2	2	2
2	1	2	3	2	2	2	1	1	2	2	2	2	2	2	2	2	1	1	1	1
.	1	1	.	2	2	.	1	1	1	1	2	2	2	2	1	1	1	1	1	1
.	1	1	1	.	.	.	2	2	1	1	1	1	1	1	1	1	1	1	1	1
1	.	.	.	1	1	.	2	2	1	1	1	1	1	1	1	1	1	1	1	1
.	1	1	1	.	.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	.	.	1	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
9	.	.	17	.	3	8	1	3	6	8	5	5	5	6	7	8	6	7	4	4
8	.	1	17	.	3	9	.	2	6	8	5	5	5	6	7	8	6	7	4	4
13	.	4	26	.	9	13	2	7	20	24	12	12	12	16	21	26	17	22	9	9
13	.	.	26	.	.	13	.	.	.	.	.	.	.	.	.	.	.	.	.	.
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.	6	6	.	9	9	.	6	6	5	5	4	4	5	5	6	6	5	5	4	4
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	1	1	.	1	1	.	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.	1	1	.	1	1	.	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	1	1	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
.	1	1	.	1	1	.	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.	1	1	.	1	1	.	1	1	1	1	1	1	1	1	1	1	1	1	1	1
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
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.	3	3	.	4	4	.	3	3	2	2	2	2	2	2	2	2	2	2	2	2
52	34	40	103	37	52	52	35	45	64	72	50	50	53	59	69	76	60	67	43	43
86 92			140 155			87 97			64 72		50 50		53 59		69 76		60 67		43 43	

N.B. Each Company consists of 103 Men, divided into two Sections of fifty-three and fifty-two respectively.

IV. On the Pines of Canada.

To the Editor of the Nautical Magazine.

Sir—In Mr. Fincham's paper on the timber used for the masts of ships in your last number, there is a want of clearness in the description of the Red Pine and Red Spruce of Canada, the first being the best timber for lower masts, and the last best adapted for topmasts and smaller spars of ships. As I know of no work containing an accurate description of the timber of British America, an article of trade now become of such magnitude and importance to the country at large, I have been induced to send you a history of the most abundant species, namely, the Pines of Canada. Without reference to what may have been said of them in this country, I have taken their scientific description from the notes of W. Sheppard, Esq., Vice-President of the Literary and Historical Society of Quebec, being the latest and best authority.

As an account of the present state of the trade of our North American Colonies might increase this article to an inconvenient length, with your permission, I will request a place for it in an ensuing number. A trade purely national, which gives employment to 1500 vessels and 2500 seamen, cannot but be interesting to the readers of the Nautical Magazine.

I am, Sir, &c. &c.

London, 10th December, 1832. NATHANIEL GOULD.

THE Pines and Firs of Canada, may be considered under the *Family* CONIFERÆ—*Genus,* PINUS, L.

Section, SPRUCES. Leaves solitary.

PINUS BALSAMEA, L.—*Abies Balsamifera,* MICHAUX.—*Sapin,* of the Canadians; *Balsam Spruce,* of the English and Americans.

"Leaves flat, grey beneath, cones cylindrical, erect."

A beautiful evergreen tree, in open situations feathered to the ground, and rising in a pyramidal shape to the height of thirty feet or more; and, on these accounts, much planted for shrubbery and park scenery in Great Britain. The famous *Canada Balsam* is procured from this tree: it is found in small blisters in the bark, extracted by incision, and received in a limpid state into a shell or cup. When I visited the village of Indian *Lorette* in the summer of 1828, two of the chiefs, who had been in England two years before, were then absent collecting it. Perhaps there is not a better varnish for water-colour paintings than that which is prepared from this liquid resin. The branches of this, as well as the hemlock, are used by the Indians, and Canadian voyagers to sleep upon. In their winter voyages they scrape the snow into heaps with their snow shoes, making a kind of snow wall on each side of their lair, then strewing the ground with branches, wrap themselves in thair blankets, and thus sleep, when the thermometer is many degrees below zero. In this way, between two Indians, did Captain Thompson sleep, in his unsuccessful attempt to overtake Captain Franklin in his Arctic journey.

The tree is common throughout Canada, but the wood neither makes timber of commerce, nor is it applied to useful purposes in the country, beyond being occasionally, for local convenience, sawn into boards.

By the late Customs' Bill, a remarkable alteration on the duty payable on Canada Balsam, has taken place, as compared with some others.

Balsam Canadensis was 15d. per lb., is now reduced to 1d.; whilst
——— Capivi, which was 4s. per lb., is now reduced to 4s. per cwt.

PINUS CANADENSIS, L.—*Abies Canadensis,* MICHAUX.—*Pruche,* Can.—*Hemlock Spruce,* American and English.

"Leaves flat, denticulate, two-ranked; cones ovate, terminal, as long as the leaves."

A large tree, with beautiful foliage, in some degree resembling yew, vying in magnitude with the *Pinus Strobus,* or white pine: it is an ornamental tree, coveting dry sandy soils. The leaves have the flavour of juniper-berries, and are occasionally used by the country people to make a *ptisanne.* The bark is greatly used throughout Canada and the United States for tanning leather, particularly sole leather, and even in preference to oak bark; but, from my own experience of American tanned leather, I should incline to believe that the tanning principle was not very strong in either of these barks. Small consignments of it have occasionally been made to London, but the tanners could not be induced to give it a trial; one parcel was sent from a spot 400 miles above Quebec.

The wood of the hemlock bears alternations of temperature and moisture, and is greatly used in the neighbourhood of its localities for country work and rural architecture, particularly for mill-work and foundations, and piers of bridges where stone is not used; in which case the logs are laid crosswise in a square form, to the height required for the sleepers: it is also used for covering roofs as shingles, and for weather-boardings; and occasionally cut into deals of one inch thick, or "boards," as they are called, for the West India market, or immediate consumption; next to Cedar, it is considered the most durable of the North American timber; it is untractable, and wants adhesion of fibre: there is no doubt however that it would be a most valuable timber for mining purposes in Great Britain; nevertheless, it is not a timber of commerce.

PINUS NIGRA, LB.—*Abies Nigra*, MICHAUX.—*Epinette Noir*, Can.—*Black Spruce*, *Double Spruce*; English and American.

"Leaves four-sided, scattered on all sides of the branches, erect, straight; cones ovate, scales oval, with undulated margins; close toothed at the apex."

A middle-sized tree, tall, straight, and taper; the foliage dense and dark. Large tracts of swamps are seen covered with this and other evergreens, giving them a dark dismal aspect, hence called black swamps or blackwood lands. From the spray of this tree is extracted the essence with which that wholesome beverage, spruce beer, is made; and the Indians turn to a valuable account the slender roots, for stitching the sheets of birch bark, of which their frail-looking but invaluable canoes are made. The root is merely slit longitudinally into strips as thick as packthread, moistened, twisted, and applied; the sewing is then payed over with resin, extracted from the pine-tree, or its knots, by boiling them in water; and the easy acquirement of all the various descriptions of European thread or cordage, has not yet offered any article better adapted for the purpose. It is not shipped as timber of commerce, but is sawed into deals. The wood of this, as well as its sister, the white spruce, resembles much the white deal of the north of Europe, which is made from *pinus abies*. The quantity shipped from the British North American provinces, is enormous. Ireland and Liverpool are the greatest markets; a considerable part of the consumption being in packing-cases.

In 1831, there was shipped at Quebec—

			£.	s.	d.
Spruce and pine deals, 12 feet by 3 inches thick, and 11 inches wide,	16,466,795	Valued on the spot without freight at	104,105	9	2
Boards and planks . .	107,103				
And from New Brunswick—					
Superficial feet 21,782 equal to deals of 3 inches,	806,740	Ditto	50,000	0	0

PINUS ALBA, LB.—*Abies Alba*, MICHAUX.—*Epinette Blanche*, Can.—*White Spruce*, English and American.

"Leaves four-sided, incurved; cones nearly cylindrical, lax.; scales obovate, entire."

A tree very similar to the preceding one; but its foliage neither so dark in colour nor dense, having a blue cast; growing in drier soils. This tree varies with the soil in which it grows, which the Canadians distinguish as *Epinette grese*, and *Epinette tremblante*. From this tree the Indians collect principally the gum with which they pay the seams of their bark canoes; it exudes on the surface, and at the knots and wounds, whence it is taken and melted, to free it from impurities. In commerce, the deals made from it are confounded with the black spruce already described; the wood is untractable, and liable to the worm.

These trees are called black, white, or red, not from the colour of the wood, but the hue of the bark.

Section, PINES. Leaves in twos, threes, or fives, in a sheath.

PINUS RESINOSA, AIT.—*Pinus Rubra*, MICHAUX.—*Pin Rouge*, Can.—*Red Pine;* English and American.

"Leaves in pairs, elongated. Cones ovate conic, rounded at the base, about half as long as the leaves; scales dilated in the middle, unarmed."

A handsome tree, of large growth; bark scaly, and of a reddish colour. This tree is the glory of Canada; it grows on light and sandy soils throughout the country, but large trees had of late become scarce, till the progress of that noble work, the *Rdeau Canal*, opened a country abounding in it, and has at the same time offered a mode of bringing it to market. The enterprise and industry of the lumberers have also followed it for hundreds of miles up the Ottawa, where it abounds in vast forests. It is now becoming the largest export, as timber of commerce, from Quebec, in squared logs, of from 10 to 18 inches each side; also as masts and spars for the national and commercial marine of Great Britain; some is also manufactured into "red deals," in every respect (when well selected in the log, and well manufactured) competing with the yellow deals of the north of Europe.

The timber, in colour, quality, and durability, appears to be in every respect equal to the best Riga; and in one particular superior, viz., that of being more free from knots; which in some parts of the country, particularly in Scotland, gives it a preference over Baltic: there is still, however, much prejudice to overcome. Experiments have been made by many persons, and in various ways, as to its relative strength, durability, specific gravity, &c.; but it is to be regretted; that results of experiments are too frequently found to coincide with preconceived or prejudiced opinions. The lumbermen of Canada have not yet got into the habit of manufacturing or squaring their timber so well as those of the Baltic, and it therefore does not convert to such advantage, and consequently fetches a lower price.

Were it not for the opportunity our North American colonies present for getting supplies for the large-sized masts of our navy, the country would be hard pressed to procure them; and, in periods of war with the northern powers of Europe, to do so would be impossible. Even France procures her naval masts from Canada. The masts from these trees cannot be procured of so large a size as from the *pinus strobus*, or white pine. It is the *red pine* of commerce; and of this, and the white pine, there was shipped from Quebec in 1831—

			£.	s.	d.
Masts, bowsprits, and spars	2,643	Valued on the spot without freight	239,700	0	0
Pine timber, tons	194,408				
And from New Brunswick—					
Masts and spars	2,920	Ditto	211,300	0	0
Small poles	3,343				
Square pine timber, tons	186,913				

Pinus Banksiana, Lb.—*Pinus Rupestris*, Michaux.—*Chipré*, Can.—*Gray Pine*, English and American.

"Leaves in pairs, short, rigid, devaricate, oblique, recurved, twisted; scales without prickles."

A small tree, rather shrubby, but varying in size according to the nature of the soil. Though abundant on the northern part of the country, it is rare in the southern: one specimen will be found at Sillery, near Quebec; it is also found at Three Rivers and at St. Paul's Bay. From its small size and rarity in the settled parts of the country, it is not a timber of commerce.

Pinus Rigida, Lb.—*Pitch Pine*, English and American.

"Leaves in threes, in short sheaths. Cones ovate; scales with reflexed spines."

A tree of large growth, about the size of the red pine, said to be a natives but, certainly, of scarce growth, in Canada; though abundant in some part, of the United States. It is a valuable timber of commerce for naval purposes. The timber much resembles red pine, but abounds more in resin. So abundant is its resinous quality, that the knots are incorruptible, and, being found in considerable quantities in the groves of this wood, are collected by the enterprising Americans, piled upon a stone-hearth, covered with sod and earth, and set on fire in the same manner as charcoal is made; the heat produced in burning causes the tar to leave the knots, and to flow over the hearth, by a groove cut in it for the purpose. The smoke of the same fires is condensed, and collected in wooden receptacles; and thus by one process are *tar* and *lampblack* manufactured.

All the trees of this family abound in resin, which is extracted from many of them by incision or heat, affording *resin*, *tar*, *pitch*, and *balsam*, of various names. As pitch pine of commerce, it is imported into Great Britain from the United States, except indeed a small quantity through Nova Scotia or New Brunswick.

Pinus Serotina, Michaux.—*Pond Pine*, English and American.

"Leaves elongated, in threes; cones ovate; prickles of the scales straight, and very slender."

Little is known of this tree; said by Purch to abound in the island of Anticosti.

Pinus Strobus, L.—*Pin Blanc*, *Can.*—*White Pine*, English and American.

"Leaves in fives."

This tree, called in our English parks the *Weymouth pine*, is the most majestic of all the Canadian pines, and, with the exception of some of this family found in the neighbourhood of the Columbia river, on the north-west coast of America, reported to be 250 feet high and 50 feet in circumference, towers over all the trees of the forest, being occasionally found of 150 feet in height, and five feet in diameter at its base. When growing in open situations, it is feathered to the ground, but, as generally found in Canadian forests, is little more than an immense stick, with a certain quantity of brush at its head, in about the same proportion as the hair on the tail of an elephant. It is this tree, of which, in general, the forests of all British America are composed; and is, in fact, peculiar to America, a similar tree not being produced in Europe. It is a most universally used and valuable timber, being also the cheapest, and is called in commerce *white pine*, *yellow pine*, or *American pine*; the quality and size vary with soil and situation, and equally so the value, according to the manner in which it is converted or manufactured, that is, as to straightness, size, and the equal, smooth, and parallel cutting of the sides. It is of immense size, of small specific gravity, very free from knots, and easily wrought. These properties, as may be supposed, ensure it an immense consumption, being equally in repute for the largest masts of our men-of-war, and the smallest article of carving, or inside decorations of our houses; it may be called, *par excellence*, the carpenters' and joiners' wood. The Americans use it by preference for ships' decks, as it resists the sun, is not brittle, and will not allow water to run through, being not liable to crack or split. In general, too, it is preferred by them for works under water, or for water-courses, or "dalls," as they are called. When properly applied and treated, it is as durable a wood as any other of the pine family, but, when improperly applied and treated, is very apt to engender dry-rot.

At one of our public docks, a very extensive granary, of four floors, of 9200 square feet in area, has been built entirely of Canada White Pine, both outside and inside work, with the exception of the uprights, which are of Red Pine. It contains about 9000 quarters of grain, has been built twelve years, and is in every respect perfectly sound and unwarped. It was allowed to remain open and empty nearly two years, to dry before painting, and to this time has been painted but twice; the architect says, that he considers it likely to stand ninety years. An extensive outside fence of Canada Yellow Pine, now twenty-three years old, is also perfectly sound; it was allowed to remain *five* years to dry before painting. It is therefore evident, that, when used for outside purposes, it should be allowed to dry thoroughly before painted, that the internal vegetable juices may evaporate. There can be little doubt, that the mode of "running up" houses, and instantly painting them, to get tenants, is a principal cause of the dry-rot so much complained of in modern-built houses, and to which *all* timber is liable more or less. I know an instance of a church, in Hertfordshire, being fitted up with the choicest Oak, and instantly painted with many coats, before the vegetable principle had exuded. In a very few years the beautiful work in the chancel was obliged to be taken down, perfectly rotten; and, at this time, the greater part of the pews are in a similar state.

From good authority I can assert, that on a bridge being carried away in the neighbourhood of Montreal, the foundations and under-water work of which had been purposely built of different kinds of timber; the White Pine was found in a better state of soundness than the Oak.

An astonishing quantity of this wood is exported from the colonies in deals: some of which, as being yellower in colour, and mellower in quality than others, are very valuable, and are particularly in demand for musical instruments. This yellowness is supposed to arise from soil and situation, and not from a difference in the tree.

The age to which this tree arrives is not known; 1500 annular divisions have been counted. I remarked, both in the United States and Canada, that in general the largest trees of this species stood blighted or dead, as if the remains of more ancient growth, or blasted by lightning. It has been generally supposed, that the colder the situation, and the slower the growth, the stronger and harder will be the timber: but from observation I cannot altogether believe this to be the fact; and even were it so, the timber would not be preferred on that account, but, on the contrary, a smooth mellow free-working elastic wood is much more in demand.

Were it not for the supply from Canada, government could not procure masts for our large ships of war. They are contracted for as large as thirty inches, that is, ninety-nine feet long, thirty inches cube at fourteen feet from the base, and measuring twelve loads eighteen feet each when dressed. Trees affording such stems are rarely found, and with immense difficulty are they brought down to the rivers. Roads of considerable length are of necessity cut through the woods, for this purpose, from the locality of the tree, to the river, at an enormous expense; even for *common* timber of merchandise, not one in ten thousand is fit to cut. The establishment of a first rate "Shanty," as it is called, (from the Fr. "*Chantier*,") to cut masts, is a matter of no small magnitude or expense; it must be commenced by the 1st of October for the next year's supply. The party occupied therein are generally from thirty to fifty men, having as many oxen, and nearly as many horses. The provisions and provender for both the men and cattle, fully ample for seven months, has to be forwarded to the establishment from Montreal at an astonishing outlay, consisting of flour, pork, molasses, rum, beer, oats, hay, &c. &c. as well as clothing, blankets, flannel, shoes, boots, axes, chains, saws, &c. &c. &c. The *advance* altogether for such a Shanty is little short of £2,000. It is from the large requisitions for these Shantys, that the lumbermen are considered the pioneers of improvement; because at two hundred miles' distance from Montreal, the carriage of such an immense material against the currents of the rivers, with rapids and falls to overcome, offers a temptation for agriculturists to follow them as closely as circumstances will admit.

The quantity of White Pine masts and timber of commerce shipped from our colonies in 1831, has been already given.

Section, LARCHES.—Leaves in bundles.

PINUS PENDULA LB.—*Larix Americana*, MICHAUX—*Epinette Rouge*, Can. —*Black Larch*, *Tamarack* or *Hacmatack*, Eng. and Am.

"Leaves deciduous; cones oblong; margin of the scales bent in; bracts fiddle-shaped."

A tall taper tree, growing throughout Canada. The timber is straight, grained, and strong, fitting it for spars of ships; but inferior to white and black spruce for that purpose, on account of its greater weight.

In the colonies it is used in ship-building, particularly for knees to fasten the beams; the but of the stem and one of the principal roots forming together the angle required, are taken for that purpose: these knees are both very strong and very durable. It also makes excellent treenails, inferior only to the Acacia, or Locust-tree.

The wood burns briskly, and furnishes a great sudden heat, and is therefore in request as fuel for steam-engines on the St. Lawrence.

Some idea of the immense consumption of fire-wood by steam-boats in America may be formed, when it is known that these boats ply on all their rivers, like coaches on our public roads, and that one of eighty-horse power, as I find by my notes, in the year 1828, consumed on its voyage from New York to Albany, about 130 miles, in eleven hours, twenty-two cords of wood, each eight feet long by four feet wide and four feet high, or 2816 cubic feet, costing 5 dollars, or 22s. 6d. per cord, on board. The expense, and the quantity of space required on board, has led to the use of coals; and for the last two years large quantities of coals have been shipped to New York and Philadelphia from the Albion coal-mines at Pictou. The coal of the United States, although abundant, does not yield its heat with sufficient rapidity to raise steam.

This tree does not form a timber of commerce.

There is a variety of this tree, so closely resembling it as scarcely to be distinguished from it: it is the *Pinus Microcarpa*, LB. or *Red Larch*, Eng. and Am.

It is somewhat singular that a gentleman should have spoken of this strong and durable timber as making 'Leather ships,' and being in consequence called 'Sailors' coffins.' From what follows, it must be considered that such assertions savour either of ignorance or prejudice, or of both.

In 1809, Larch timber grown by his Grace the Duke of Athol at Dunkeld, was first used in the British Navy at Woolwich, in the building of the Serapis store-ship, the Sybille frigate, the bottom of a lighter, and for piles driven into the mud, alternately wet and dry: and in all these situations proved a durable wood. The Athol, of 28 guns, was also built entirely of Larch timber from his Grace's estate; and, at the same time, the Niemen, of the best Riga. After their first course of service, on being examined, the Niemen was found in a decayed state, and condemned accordingly; whilst the Athol was again put into commission, and, after a second course of service, was still found in a sound state, and is at this time on a voyage to the West Indies.

It was also remarked, that during the time this Larch timber lay in Woolwich dock-yard exposed to the weather, neither the heart nor the sap-wood were in the least decomposed, nor was there the slightest appearance of lichen or fungi growing upon it. One of these trees on his Lordship's estate had in fifty years attained a height of 86½ feet, containing 82 feet of solid wood; in general, however, its small scantling renders it scarcely applicable for ship building.

Juniperus, L.—*Juniperus Virginina* Wm.; *Cedre Rouge*, Can.—*Red Cedar*, Eng. and Am.

"Leaves in threes, adnate at their bases: in the young state they are imbricate; older, they become spreading."

A small evergreen tree, growing abundantly on the shores and islands of Lake Ontario; but very sparingly in Lower Canada. It covets a deep clay, or vegetable soil, subject to overflowings. In Upper Canada, and the United States, where it is plentiful, it is used for fences; being superior to every other wood for durability in exposed situations; indeed, it may almost be considered imperishable. It can scarcely be called a timber of commerce, owing to an enormous duty on it, by weight, in Great Britain. It has occasionally, through ignorance and by accident, been shipped as lath or fire-wood, but seized for high duty, on clearing.

Juniperus Communis Depressa L.—*Genevrier*, Can.—*Juniper*, English and America.

"Leaves in threes, spreading, mucronate, longer than the berry."

A low spreading shrub, about two feet high. Although hitherto the berries have not been gathered for commerce for the use of the distiller, it is difficult to find a reason for the neglect.

Juniperus Saberia, L.—*Savin*, Can.: *Savine*, Eng. and Am.

"Leaves opposite, obtuse, glandular in the middle, imbricate four ways, delicate, acute opposite."

A low decumbent shrub, about six inches high. I am not aware that it is used medicinally in Canada; the romances of the Malthusian theory have not yet crossed the Atlantic. The leaves are, however, occasionally employed, made up with hog's lard, for rheumatism.

Thuya, L.—*Thuya Occidentalis*, L.—*Arbor Vitæ*—*Cedre blanc*—Can.: *White Cedar*, Eng. and Am.

"Branchlets two-edged; leaves imbricate four ways, rhomboid-ovate, closely pressed, naked' tubercled; cones obovate; inner scales truncate; gibbous below the apex."

This tree looks like a species of Cypress; it grows generally in moist grounds, or clay soils, subject to overflowings, and on the sides of hills, attaining a large size in favourable situations. In the Back Lands of the Missisippi are immense swamps covered with this wood, than which no prospect on earth can be more gloomy. It might have been supposed, that the ancients, who dedicated the Cypress to funeral rites, had seen these "Black Swamps;" nothing so forbidden in the way of vegetation exists in Europe.

The timber has the lowest specific gravity of all Canadian hard wood, but the greatest durability. It is of slow growth, Michaux having counted 277 annular rings in a stem of twenty-one inches diameter. It is in great request for fencing; in complete exposure, and on wet soil, and as posts, it will last half a century: it is in request by builders for cellar beams: as it rives freely, it is also much used for shingles and laths. The Indians use it for the ribs of their bark canoes; and for common purposes of cordage, the bark of this tree is twisted into ropes by them. In colour white, and rather aromatic in its scent.

It does not bear the saw or tools well.

This wood is not a timber of commerce.

TAXUS, L.—*Taxus Canadensis*, WM.—*Taxus baccata Minor*, *Michaux*—*Buis*, Can.: *Canadian Yew*, or *Dwarf Hemlock*, Eng. and Am.

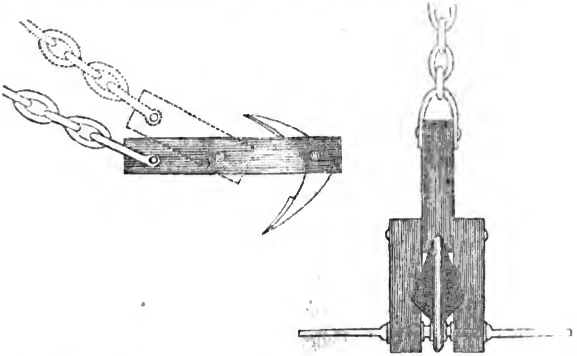
"Leaves linear, two ranked, margin revolute."

A recumbent evergreen shrub, rising obliquely to the height of four or five feet. In foliage it resembles Spruce; although called 'Buis' by the Canadians it has little resemblance to Box. The berry is quite similar to the fruit of the European species, found in shady woods, and the north sides of hills.

The remarkably recumbent habit of this plant, and the common Juniper in Canada, may possibly be occasioned by the weight of snow lying on their close foliage during nearly one half of the year.

V.—SUBSTITUTE FOR AN ANCHOR, BY COMMANDER E. BELCHER, R.N.

THE following is a sketch of a make-shift anchor proposed by Commander Belcher, of His Majesty's Ship Ætna. It is formed of three pigs of ballast, each weighing 56 lbs. and a pair of movable flukes; the bar connecting these, with the ballast, serving also as the stock of the anchor. The dotted line in the sketch shews the position of the single pig, when there is a strain on it.



The whole weight of the three pigs, each being 56 lbs., would be 168 lbs., and, allowing 22 lbs. for the weight of the extra iron used, would give it a total weight of 190 lbs.

VI.—New Metallic Sheathing for Ships' Bottoms.

A NEW metallic sheathing, the invention of Baron Wetterstedt, has recently been made for covering ships' bottoms, which possesses many practical advantages for this purpose over copper.

To prevent the rapid corrosion and decay of copper, when in contact with sea-water, has long been a desideratum; and it was for this purpose that Sir Humphrey Davy proposed the use of protectors, or the contact of some more easily oxidisable metal, as zinc.

Although the practice founded upon his ingenious theory proved unsuccessful, yet it was satisfactory to him, as it pointed out the course of remedy necessary to be adopted; for it is only by the electric influence of certain metals when in contact, that chemical action can be prevented.

Alloys of copper have been proposed, and are not so susceptible of being acted upon by chemical agents as pure copper, but they are destitute of that tenacity and elasticity, which is necessary for such a purpose.

All these defects in practice are found to be obviated in this new invention, which possesses some peculiar advantages for this and many purposes to which its use may be extended. Whilst the surface remains perfectly clean, there is no adhesion of barnacle, shells, or other marine productions, which proved so seriously detrimental to the success of Sir Humphrey Davy's protectors.

This new compound is highly tenacious and elastic, and possesses a peculiar and advantageous power of adapting itself to surface, so much so, that by a violent strain or blow it readily yields to the force of the percussion.

This power of adapting itself to any form of surface, will not only be found advantageous on first sheathing the vessel, but will also prevent the evil effects of any subsequent strain or blow, and even tend much to preserve her from any external injury.

The price is considerably less than that of ordinary copper sheathing, whilst it is found to be far more durable. The saving amounts to nearly £100 in four hundred sheets of copper, and is named by the inventor *Marine Metal.*

VII.—Island of Ascension in 1831.

From the MS. Journal of G. Bennett, M.R.C.S.

AT daylight on the 20th February, the Island of Ascension was seen, bearing N.W. about four leagues distant, and displayed a most desolate appearance.—Numerous man-of-war birds, sea-swallows, boobies, gannets, and tropic birds flew about the ship. The coast consisted of barren rocks, without a speck of verdure.

When the mountain, however, became partially developed, it relieved the barrenness of the scene around by the verdure of its declivities; and red volcanic ashes prevailed, several hills entirely exhibiting that appearance.

About noon we were off the settlement situated on the N.W. side of the island, and several neatly constructed houses appeared enlivening a little the barren scene around. A transport (St. Croix) was at anchor in the roads, having just arrived with stores; a boat came off from the settlement, with a book, in which the ship's name, &c., was inserted. I accompanied the commander on a visit to the shore: the landing is sometimes dangerous, on account of the surf; at this time it was very easily effected. The landing-place was on a flight of steps, at the extremity of a wharf; a small crane was near, to assist boats in approaching, and persons in landing. A delightful trade breeze rendered the air cool, which would otherwise have been intolerable, on account of the reflection of the sun from the sand and lava. The residences of the garrison, the storehouses, &c., are neat, and had been lately completed; many other buildings were in progress. The island has now been fortified at every part which is considered accessible; these points being few, however, not many batteries are required. The establishment consists of marines, and marine artillery, (about 400,) under a commandant, Captain Bates. The privates are masons, carpenters, quarrymen, &c. the houses are constructed by them, and, in fact, they undertake all the laborious work. This island is considered of great importence, being directly in the track of our homeward-bound shipping from the East Indies, &c., and would, in the event of a war, have afforded a rendezvous for the enemy's cruisers.

I was informed that excellent soil was found under the lava, at a depth of two feet; cultivation of vegetables, &c. is at present confined to the green mountain; the present object of fortifying and erecting buildings on the island being completed, cultivation will be more attended to. The beach, at first thought to be composed of sand, was found to consist of very small fragments of shells; in some places they had become (from some cause not readily accounted for) firmly compacted together. These slabs were formed of several layers, of which the size of the fragments differs in each layer; they are used for tombstones, steps of doors, and are broken and burned for lime. Of the vegetable kingdom, the euphorbia only was growing in small tufts, distributed not very abundantly about the rugged lava, and at this time in flower; this simple plant was, indeed, a beautiful object among such barren scenes. There are three species of butterflies on the island, of handsome colours.

A great acquisition to the island has been a good supply of water; a shaft had just been sunk upon one of the mountains, and several tons of water had been raised daily. The only inconvenience is that of being obliged to bring the water down by casks in carts, but iron pipes from England, are now being laid down, to convey the water to the wharf, and the shipping will be supplied by means of hoses. Moorings are laid down in the roads.—The turtle-ponds were well stocked with turtle of a large size, varying from two to eight hundred weight; the price fixed was fifty shillings each. We were politely invited, and dined with the officers at their mess. At a place called 'The Fair,' the birds named sea-swallows, as well as numerous other aquatic birds, congregate; and the eggs of the sea-swallows, which are of a dirty white, with dark red spots, and about the size of a crow's egg, are collected at certain seasons of the year, in thousands; several of these were given to us, and found delicate and excellent eating. It was dark before we went off to the ship, and a heavy surf rendered the embarkation very dangerous; no boats should attempt going off after dark. A marine, named James, who was a little intoxicated, fell into the water, and, being overpowered by the violence of the surf and the eddy, he perished. After some difficulty, we all re-embarked, and, getting safely on board, resumed our voyage.

Dysentery is the only disease experienced on the island, and the temperature of the air is pleasant, being seldom higher in the shade than 83°, the constant trade-breeze tending to keep the atmosphere temperate. Merchant ships in distress for supplies, may obtain them at this island, the only extra charge made by the government being the freight from England. A kind of congor eel, procured at this island, when brought to the table, had the bones of a lilac colour.

VIII.—*Establishment of the Hydrographic Office, at the Dépot de la Marine, Paris.*

We have been favoured with the following authentic statement of the number of persons forming the Hydrographic Department at the Dépot de la Marine in Paris.

Extrait du Budget de 1831.

Apperçu de la Dépense totale du Dépot général des cartes et plans de la Marine.

Personelle.

1 Vice-Amiral—Directeur.
1 Directeur adjoint—Ingenieur-hydrographe en chefe—Conservateur.
1 Ingenieur hydrographique en chef—Conservateur adjoint.
4 Ingenieurs de premiere classe.
4 Ingenieurs de deuxieme classe.
5 Ingenieurs de troisieme classe.

2 Sous—Ingenieurs.
Eléves.
4 Commis.
1 Bibliothécaire.
1 Dessinateur.
2 Chefs de bureau.
2 Commis.
7 Portier et garçons de bureau.

Making a total of 36 persons, the amount of whose salaries is 102,050 francs, or £4082.

Other expenses connected with the office:

Gravure, impressions et relieures de cartes	80,000
Fournitures de bureau, chauffage et eclairage; Entretien de Muebles; Emballages, ports de lettres, &c.	13,800

Amounting to 93,800 francs, or £3752, annually.

Hence the total expenses of the Hydrographic Office at the Dépot de la Marine of Paris amount to £7834.

IX.—ADMIRALTY COURT DECISIONS. No. II.

COURT OF VICE-ADMIRALTY.—LOWER CANADA.

THE COLDSTREAM—*Hall.* 1832.

JUDGE KERR.—This is a suit brought by William Warr, seaman, against the captain and first officer of the ship Coldstream, chartered by the East India Company, to recover compensation in damages for an assault and false imprisonment alleged to have been inflicted on the voyage from China to this port.

The summary petition, besides a prayer to award £200 damages, concludes for the payment of the Promovent's wages, and a rescision of the articles, so far as respects him, on the ground of ill treatment. The defendants, by their responsive allegations, justify, on the plea of mutinous, disobedient, and disorderly behaviour.

There has been laid before the Court, as is not unusual in such suits, much contradictory evidence; but the circumstances, as they appear to me, are the following:—

On the night of the 25th May last, when the Coldstream was near the Banks of Newfoundland, they experienced a strong gale of wind, and all hands were ordered to take in the foresail: when the gear was sufficiently up for furling, and every thing prepared, the men were sent up on the yard to furl the sail. When they were upon the yard, Warr, who was aloft, called out, that if the ship were not kept away before the wind, they could not furl the sail. Mr. Taylor, who had then assumed the command on deck, observed, that there was a sufficient number of men on the yard to furl the sail in the hardest gale of wind that ever blew, and refused to keep the ship away. Perceiving the men meditated coming down without obeying his orders, he called out to them—"Let me see the man that lays down before the sail is furled." On this, Warr was heard to address his companions on the yard—Let us all go down together in a body, and see what he will do with us."—This seems to have had its effect, and Warr and Walsh taking the lead, the men all came down upon deck.—At this time, Captain Hall, on coming from his cabin, sharply remonstrated with the men for their conduct, and, accusing Warr of being their ringleader; he shook his clenched hand in Captain Hall's face, telling him that he was no gentleman, and the most scandalous captain that he ever sailed with.

It also appears, that on Mr. Holbrook, the second officer, interfering, and desiring him to desist, Warr called him a liar, and a half-drilled soldier, and that the rest of the officers were no better.

After much more abusive language, both to Captain Hall and his officers, Warr was by Captain Hall's orders placed in irons. This happened early in the morning of the 26th May, and on the same day a court of inquiry being assembled in the cuddy, and the officers being of opinion, that it became absolutely necessary for the maintenance of subordination and discipline of the ship that Warr should be punished, he was accordingly condemned to receive three dozen of lashes at the gangway. In the necessity of this punishment Mr. Harrison, the surgeon, concurred, though he states that, being only connected with the health of the ship, he had no vote on the occasion.—It further appears that the boatswain's mate, whose duty it is to inflict such punishment, whether from sympathy towards his messmate, or from unskilfulness in the use of the instrument, only exhibited a mockery of punishment, and, as Mr. Harrison states, "dropped the cats upon his back;" and on this, Captain Hall desired Mr. Taylor to complete the punishment—which was done accordingly.

This is a case, as disclosed in the evidence, though it has been attempted on the part of Promovent to give a colouring to the transaction which does not belong to it. It has been said that the punishment was inflicted with great severity—even with cruelty—insomuch that the blood streamed from the back, and that the blows were not inflicted between the shoulders, as is usual, but on the neck, side, and loins, and, as represented by Goddard, who admits he himself had been flogged, that Warr's back was, from the severity of punishment, like a jelly; but this is contradicted by the surgeon, who says, that no blood was drawn, nor was the skin broken, and that, in his opinion, Warr was able to do his duty the same day. In these facts he is confirmed by Mr. Holbrook, and by Dyer and Davenport.

It has also been represented, that when Warr was brought on deck to be punished, Capt. Hall seized him rudely by the lips, and that, previously to his being flogged, no intimation was given to the crew as to the cause of his punishment. On both points, however, the Promovent's witnesses are contradicted.

On the second by Scott, the Promovent's witness, and by Mr. Solby, the third officer—and on the first point the fact is explained away by many of the Defendant's witnesses, who swear that when Warr was brought to the gangway, his language was so abusive and seditious, that Captain Hall only put his hand on his mouth to prevent the continuation of it.

The Promovent's advocates have relied on the testimony of some of the crew, who swear that the behaviour of Warr was always respectful and obedient, and particularly on that of Goddard, the boatswain's mate, who is pleased to say, that Warr is a civil, honest, and quiet man, and that he never uttered a bad word. But how is this to be reconciled with the evidence of Walsh, (who appears throughout this matter to have been a co-ringleader,) for he swears that when Captain Hall said several abusive words to Warr, he made a reply to some of them, and that he persisted in speaking until he was threatened to be gagged.

Walsh does not mention the Promovent's words, but other witnesses supply the deficiency; for, Dyer, the sailmaker, says, that when Captain Hall desired him to hold his peace, he told him that he had spoken in the company of gentlemen, where he, Captain Hall, durst not shew his face; and that he, Warr, had been flogged in a better ship, and by a better man, and by his, Captain Hall's, master. That, during this time, to use the witness's own expression, Warr "bobbed his head in the Captain's face."

He further says, that though he had been eleven years at sea, he never saw a captain so insulted; to the same effect, is the testimony of Davenport, the carpenter, who says, that Warr's conduct was mutinous, desperate, and outrageous;—that when he was brought up to be flogged, his tone and manner was unruly and disrespectful, and that, though he, the witness, had been ten years at sea, he never saw such unruly conduct. So says Mr Solby, the third officer, who states, that Warr insultingly said to Captain Hall, "I have spoken to your masters on his Majesty's quarter-deck;"—and that on all occasions of dissatisfaction among the men, Warr was always the spokesman. In this they are corroborated by Messrs. Comyn and Sewell, the midshipmen, the first of whom says, that Captain Hall repeatedly told Warr to hold his tongue; which he refused to do, insisting to speak, and at the same time, pushing his head, to use his words, in the captain's face; that he never addressed Captain Hall by the word, "Sir," and that his gestures and deportment were so menacing, that he appeared to the witness to have thereby intended to provoke Captain Hall to some act of violence.

The counsel for the Promovent have called in question the right of the master under any circumstances of misbehaviour to inflict so public an act of castigation on a seaman: but the cases of the *Agincourt* and *Lowther Castle*, and that of the *Inglis* East Indiaman, to which my attention has been called, clearly establish the right to punish in the mode proved to have been practised on this occasion, the master thereby assuming on himself the responsibility which belongs to the punishment being necessary for the due maintenance of subordination and discipline, and that it was applied with becoming moderation. The same maritime principle has been adopted by a neighbouring commercial and enlightened nation, justly boasting of the freedom of its laws and institutions. Indeed, it is an arbitrary power, which dire necessity sanctions; and the execution of which, necessity and moderation alone can justify.

On the whole, I have no hesitation in saying, that this individual, by his influence on the minds of the crew, led them to an act of disobedience and mutiny. The mutiny, 'tis true, was not carried so far as to lay violent hands on their commanding officer, or to put him into confinement; or to carry away the ship; yet considering that Warr excited the men to come down from the yard in a body, in disobedience of the orders of the captain; that on Captain Hall's saying he would shoot the first man who came down on deck, Warr scoffingly said, "and pray who will shoot the second?" I cannot—coupled with the whole of his language and behaviour—but consider him as a mover of sedition, having a direct tendency to subvert the good order and discipline of the ship. His punishment of course became absolutely necessary for the preservation of the whole concern. I am also of opinion that it was in no degree excessive under the circumstances which called for it.

The conduct of Captain Hall is admitted by all the witnesses—excepting on this occasion—and that even by Walsh, to have been mild and humane, and his going down to visit Warr, when in irons, and saying to him—"Warr, I never confine a man without seeing that he has a convenient place to lie down upon"—is to me a convincing proof of his reluctance to punish this individual, and a desire to forgive him, if he had shewed the least coutrition for his conduct.

In respect to Mr. Taylor, the other defendant, it must be recollected that he was the first officer of the Coldstream, which had a crew of about sixty men, and that on him devolved the active duties of the ship, and the enforcing of all lawful commands.

Such a person must often incur the odium of the crew, and I am not surprised that his character should be represented as arbitrary, and his orders unreasonable: however, it is not for the crew to pass judgment on their superior officer, and to rise up against his authority. Nor am I at all inclined to believe, contrary to the weight and respectability of the witnesses in his favour, that he was in a state of intoxication on the night of the 25th of May, or that such is the habit of his life.

I have patiently gone through the evidence on both sides, and the result is, that I decree this suit to be dismissed, and condemn the Promovent to pay expenses.

A Sailor's Advice to his Son,* on Entering the Royal Navy.

On taking up this subject, as we proposed in a former number, we are not insensible to the difficulties that lie in our way. Perhaps, in the whole range of subjects, which fall within the limits of our work, there is not one, even in the arena of science itself, on which such opposite opinions prevail, as on that of the habits to be instilled into the mind of the future naval officer. We will venture to say, with all our respect for science, that there are few which are more important; for on these habits depend full oft the lives of individuals. Excellence in his profession is the aim of every one when he embarks in life, and each strives to attain it by the road which he thinks the best. That the course which we shall point out to the young naval aspirant, on his first adopting a profession, wherein he will find his morals beset with danger of every shape, should coincide with the opinions of all who may meet with it, is too much to expect. But we can safely assure him whom we now address, that if, in the trials which he has to encounter, he will observe the precepts which we shall lay down for his guidance, they will shield him from dangers that have been too often fatal to others; and that, while they engender an early habit of self-respect, they will lay the foundation of that high-road which leads to future honour.

My dear Charles,

You are now entering on a world where trials and difficulties will beset you on every side, in a profession to which I have devoted several years of my life, and in which your advancement will very materially depend on your own exertions. It is the profession, however, which you have chosen of your own accord; and as I know, from experience, that you will there meet with many allurements calculated to tempt your passions and to mislead your judgment, I shall commit to paper a few brief observations for your future guidance, to which I hope you will pay attention. They shall be as concise and as clear as my abilities will permit: and I further assure you, that they are dictated by an earnest desire to be useful to you; and the hope that, should it please God to continue your life, you may prove not only a good boy, but, in the course of time, a great man, and become a blessing and an ornament to your family, and every friend interested in your welfare.

I shall class my remarks under separate heads, so that, when occasion requires, you may refer to them singly.

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* At the age of thirteen.

LETTER I.—*Departure from Home.*

You must now quit that abode in which your infancy has been passed; you must be separated from those parents, whose tender affection has supplied all your boyish desires, and from those brothers and sisters who have been the kind and disinterested partakers of all your past amusements. You will now have to struggle for yourself among strangers, who will not feel the same regard for your welfare; and I intend to present to you a faithful picture of your future society, that you may guard against those errors to which you will find yourself unavoidably exposed, that you may erect an impregnable barrier around your own virtue, and that you may acquire a love of those nobler dispositions with which you may hereafter associate.

I am sure that you will feel much regret at such a parting, and I do not deprecate the feeling: but it is now that the trial of that fortitude commences, which must sustain you hereafter under every reverse of fortune, which must arm you with patience in adversity, with moderation in prosperity, and with undeviating rectitude at all times. That fortitude must now be put to the test. Let your mind, therefore, rest on the prospect of that honourable station in life for which you are going to prepare yourself; and, by looking into futurity, learn to anticipate the period, when, improved in understanding, in knowledge, and in manliness of character, you will revisit those dear relations. The novelty that lies in the way to your ship will be amusing and instructive, if you make a proper use of it; and always remember, that every object which presents itself to your notice, however unimportant, will, in some way or other, afford you subject for useful inquiry.

LETTER II.—*Entry on board. Discretion in forming immediate Acquaintance.*

The different habits of life which it will now become your duty to adopt in every respect, cannot yet enter into your contemplation. You will be best inured to them by experience. On introduction to your companions, you must be cautious how you form your acquaintance with them; and should there unfortunately be among them any whose general demeanour you disapprove, whose language or whose actions would be deemed criminal in the family which you have left, I desire you to avoid all intimacy with them. Be especially on your guard against any one, old or young, who may endeavour to insinuate himself into your good graces by flattery, or by too forward a desire to serve you. Prefer always the blunt and honest expressions of him, who neither seeks nor shuns your friendship, until he knows whether you are deserving of his own. With him, (although you may not entirely agree,) mutual respect, confidence, esteem, and good offices, will reciprocally follow, while yielding to the first, might terminate in your being misled to a dereliction of your duty, cajoled out of your money and reputation, involved in excesses prejudicial to your health and peace of mind, and at last sneeringly deserted. Such is not an overcharged representation, I assure you, of the consequence of forming an early and indiscreet acquaintance: I have too often been a witness of it; and I know that few circumstances are calculated to have a more powerful influence on your future character, than the disposition of the first boy with whom you may form an intimacy. Instead, therefore, of forming those immediate friendships in the commencement of your career, to which boys are so very partial, direct your attention immediately to the duties of your new station; they will comprehend a variety of requisite and amusing occupations; and when you are found to be steadily engaged in such appropriate pursuits, those who are as commendably employed, those whose exemplary and virtuous behaviour bespeak them as deserving of your acquaintance, will consider it an honour to enjoy your friendship.

LETTER III.—*Economy. Frugality in small Expenses. Dress, Linen, &c.*

Although it is not right that the entire sum to be deposited for your current expenses should be placed in your charge, you will be furnished with small portions of it, from time to time, for the payment of your mess, and various little articles of daily consumption: and, as you will then commence a system of expenditure, the manner in which you conduct it may have such an influence on your future pecuniary affairs, as to occasion your becoming hereafter a poor or a wealthy man.

I am far from wishing you to commence by being penurious, and only desire you to be careful, that, when proper opportunities occur, you may be generous and charitable. I particularly enjoin, that you pay the first entrance-money for your mess immediately, and also the regular subscriptions at the proper stated periods; by this practice, you will be always entirely independent in mind, and exempt from many unpleasant reflections, which frequently drive prodigal boys, as well as men, into desperate and wicked courses. It is a beginning in the trifling articles of soap, brushes, combs, blacking, &c. which, in a midshipman, establishes the rudiments of a methodical management of his expenses. The expenses of washing, letters, stationery, keeping up a stock of clothes, &c. are of heavier moment; but if you once get into a regular habit in that minor department, it will follow in your more extensive purchases. You must keep a book, in which you are to insert every item of money that you receive and pay. You must always send a washing-bill with your linen, and keep a duplicate to examine it by, when returned with your things. Your chest must be constantly locked, and you must never leave any articles of dress, soap, brushes, towels, &c. lying about; but after they are used, you must deposit them safely under lock and key.

Although I hope you will always despise the foolish vanity of wearing superfluous fine clothes, and the ridiculous character of a fop; yet, you must always be as neat and clean in your dress, as situation and circumstances of duty will permit; nor will it be disreputable to you, to be even smart, and rather particular in that respect. Every description of cleanliness is so essentially conducive to the individual and general health of those confined within a ship, that it cannot be too rigidly or too minutely exacted by the officers, whose duty it is to set a proper example in that respect, as well as in every other.

LETTER IV.—*On Duty in general. Inquisitiveness, Zeal, Alacrity, Punctuality, Emulation.*

You are yet too young and too inexperienced to know the extent of your own mental powers; but, from the instant that you are placed on the quarter-deck of a man-of-war, those powers must be called into action, in order to embrace every new object which may present itself, whether of the least or of the utmost importance. From the moment that you become thus enrolled in the service of your country, and subject to the discipline which that service has prescribed, the utmost exertion of your best faculties is demanded of you; and that those faculties should be directed to the attainment of that just knowledge of your profession, which will enable you to serve it to the best advantage. You are, then, no longer a mere individual in society, but a link in the great chain of national defence; a being training up in those principles of independent loyalty that surround the throne, to assert and maintain the just rights and authority of your Sovereign, to support his legitimate government, and to protect the peace, security, and prosperity of all your fellow-creatures who people his empire. Do not imagine, then, that even as a little midshipman your station is unimportant, though it is necessarily subordinate to many higher authorities. In proportion as you feel impressed with this consideration, you will become a zealous or an ordinary officer.

Alacrity, in a general sense, signifies a ready attention in receiving the orders of a superior officer, and fulfilling them with despatch. An attention to this part of your duty, by a punctual and correct repetition of these orders, and an immediate return to your previous station, will single you out to the notice of your commanding officer. In the ordinary and extraordinary routine of your duties, incentives to emulation will be perpetually presented; but I do not wish to inspire you with that meritorious feeling for the sake of mere competition, as it is unbecoming even to attempt stepping before a messmate for the purpose of getting the better of him. Aim at excellence from a nobler motive, an earnest aspiration after superiority for its own sake—not from a selfish and invidious desire of distinction at the expense of another. As you advance in rank and experience, emergencies may arise, when the benefit of the service would require you to push before a brother officer; but such emergencies are rare, and are rather to be avoided than courted. At the same time, I by no means intend, that you should repress, or lose, the fair and open advantage, which your superior assiduity or abilities may give you over others.

(To be continued.)

WORKS OF NAUTICAL AND GEOGRAPHICAL SCIENCE AND ART.

BOOKS.

RECHERCHES pour servir a l'Histoire naturelle du Littoral de la France. *Paris.* 1832.

M. M. Adouin and Milne Edwards have presented to the Academy of Sciences at Paris the first volume of this work, the second part of which is composed of two memoirs by the latter of these gentlemen, on the actual condition of the maritime fishery in France.

For a long time this branch of industry has been the principal source of the riches and power of Holland, and De Witt says that a fifth part of the population of that country is indebted to it for subsistence. In France this is far from being the case; but at the same time it contributes materially to the prosperity of those living on the coast, and to the formation of her navy. The fishery employs more than one-third of the men who voluntarily enter that service, and the calculations of the author shew that the number of fishermen is at least as considerable as that of sailors employed by all the other branches of maritime commerce put together.

In fact, the total number of seamen employed by France is about one hundred thousand; and in 1826, which may be taken for example, the crews of all the merchantmen, coasters as well as others, did not amount to more than 32,000, whilst in the fishery 36,000 were employed. A small portion of seamen are employed also in the navigation of the interior, but the others are embarked on board vessels of the state, and consequently do not contribute directly to enrich the country.

It may be said then without exaggeration, that it is to the fishery that one-half of the French seamen owe their subsistence. This result sufficiently proves the importance of this branch of industry to France; but the numbers shewn do not give a proportionate indication of their influence on the population of the coast. The fishery carried on there may be divided into three principal classes, viz. the great and small fishery at sea, and that of the immediate shore. Now, this last, which is done on foot during low water, has not been taken into the calculations of the author. It is generally performed by women and children, and in a great number of places they form a large portion of the indigent population of the coast. The great fishery which is carried on at sea, and far distant from the shore, and in which the cod and whale fishery are included, employ annually about 10,000 men; and the small fishery, that is to say, that which is carried on near the coast, employs annually from 26 to 29,000 men. The first memoir of M. Edwards is especially dedicated to this last branch of maritime fishery, the produce of which amounts in value to from 16 to 17 millions yearly. In the second memoir he treats on the cod fishery in detail.

The third part of this work contains the statistic researches of M. Adouin on the shipwrecks which have occurred on the coasts. The author confines himself principally to the consideration of the influence of the seasons, and various similar circumstances, on the frequency of these events.

The Geographical Annual, or Family Cabinet Atlas, specially patronized by their Most Gracious Majesties. *London*, 1832.

Dr. Johnson's excellent advice, to adopt little books, has not been followed to a better purpose than in the work before us. The plan is decidedly good. Although the maps are drawn on a scale which will not admit of many names of places appearing on them, their positions are readily found, from a table of latitudes and longitudes attached to each, by which means the maps are made equal to those of many modern atlasses. The Geographical Annual unites convenience with utility, and may justly be considered the most valuable, if not the most elegant of those little works which introduce each new year's-day. It embraces the geography of the whole world; and, like other perennials which unfold new beauties with every new year, the Geographical Annual promises to do the same, by exhibiting the new discoveries as they are made. If we mistake not, the next will present us with a rich harvest in many parts of the world.

Kruzenstern's Atlas.—We hear, with much satisfaction, that the celebrated Russian hydrographer, Admiral Kruzenstern, is about to produce another edition of his valuable Atlas of the Pacific ocean, in consequence of the numerous discoveries of islands in that ocean, and the improved charts of the northern coasts of America, in the Pacific, resulting from the late voyage of H.M.S. Blossom.

CHARTS.

CHART of the TEXEL and HELDER CHANNELS. From a survey by Lieutenant Ryk, of the Netherland Royal Navy, in 1816. *Size, Half Double Elephant.* Admiralty, 1832.

> In addition to the operations of Lieutenant Ryk, this chart has also been constructed from the observations of our own officers. The Niewe Diep, the Docks and Canal, are taken from a plan made of them in 1830. The plan of the Drempel channel, and the views, are from Lieutenant Ryk's survey.

The WESTERN COAST of SUMATRA. Compiled from various Authorities, by Captain James Horsburgh, 1832.

> There is much information in this chart. It professes to have been constructed from various materials, in the absence of a regular survey of this dangerous coast, and contains all that is known of it. It is well filled with plans of harbours in the island by various persons, and among others a plan of the Cocos Islands in the Indian Ocean.

The COAST of TANASSERIM, by Daniel Ross, F.R.S. Marine Surveyor General, and Lieut. R. Lloyd, Indian Navy. 1832.

> This chart includes the coast between the latitudes of 12° 40′ N. and 10° 20′ N of a part of the world until very lately entirely unknown, It is a valuable acquisition to the charts of this part of the world.

INVENTIONS, ETC.

SIGNAL LANTERNS.

Captain N. de Coninck, of the Royal Danish Navy, has invented a lantern to be used for signals, that is said to give a much more brilliant light than those at present employed for that purpose. The light is obtained on the argand principle, without the use of glass, by conveying a current of air through the lantern. The lamp will contain sufficient oil to last several hours, and is perfectly secured, by the construction of the lantern, from the effects of bad weather. We hear that they have been tried, with complete success, in a gale of wind. In addition to the brilliant light obtained from the application of the argand-burner, Captain Coninck has applied a circular reflector, which considerably increases the light.

The above officer has also applied the same principle to the construction of deck-lanterns, eight or ten of which, when placed amidships, are sufficient to give light to the guns on the deck of the largest man-of-war. The light is so well secured from external effects, that it withstands the concussion produced by the firing of the guns, which so frequently extinguishes the light in the common lantern. The efficacy of his lanterns has undergone a severe trial on board two Danish frigates. For this purpose, the lantern was suspended from the muzzle of the gun, which was fired with the lantern in that position. A common lantern placed by the gun was immediately extinguished by the concussion of the first discharge, while the new lantern remained steady during fourteen successive discharges, when it was extinguished by the united effects of the concussion and the great vibratory motion it obtained.

Patent Screw Fid.

This is one of those useful inventions which ought to be better known in the Royal Navy than it appears to be, for it is already adopted by the Americans, as well as by our own merchant shipping; and we hear that it is not yet fitted on board one of His Majesty's ships! Nothing can be more simple or efficacious. We propose giving a sketch of it in a future number, and shall merely observe, now, that it is the simple fid fitted with a screw at each end, by means of which the mast may be struck, and also fidded, without starting the rigging. Indeed, so great is the power of one hand with it, that it would require no more to do either. It is the invention of Messrs. Pearce and Gardner of Liverpool, and we hope soon to see it adopted generally in the Royal Navy.

Escapement of Chronometers.

In our last number, we alluded to the escapement of chronometers, invented by Mr. Arnold. We contemplate investigating the subject of chronometers generally in some of our future numbers; and, in the mean time, shall be thankful for any information on the above important invention, with which any of our readers may favour us.

Mr. Editor,

You have shewn in your last number that Mr. Lang's 'safety keel, may be detached from the ship by her striking the rocks, without producing any injury to her hull. Will any of your readers have the goodness to inform me, through the medium of your pages, of what use or importance the keel is to the vessel? B.

NAUTICAL MISCELLANY.

NAVAL INTELLIGENCE.

Flag-Officers in Commission in command of Stations, Flag-Lieutenants, and Secretaries.

Stations.	*Flag-Officers and Commodores.*	*Ship.*	*Date of Appt.*	*Flag-Lieutenants*	*Secretaries.*
Nore	*Vice-Admiral* Sir John Poo Beresford, *Bart.* K.C.B.	*a*	30 July 30	John Washington.	William Christy
Portsmouth	*Admiral Sir* Thomas Foley, G.C.B.	*b*	22April30	Charles Gayton ..	James Pinhorn
Plymouth	*Admiral Sir* Manley Dixon, K.C.B	*c*	22April30	Matthew Foot ..	Thos. Woodman
North Sea	*Vice-Admiral Sir* Pulteney Malcolm, K.C.B.	*d*	9 May 32	Rich. Morgan (*a*)	Joseph Edye
Mediterranean ..	*Vice-Admiral Hon. Sir* Hen. Hotham, K.C.B. G.C. St. M. and G. ..	*e*	30 Mar 31	Joseph F. Stirling	John Irving
West Indies .. Halifax and .. Newfoundland	*The Rt. Hon. Sir* G. Cockburn, G.C.B. ..	*f*	Dec 32	H. G. Hamilton	T. Woodman
South America..	*Rear-Admiral Sir* Thos. Baker, K.C B.	*g*	9 Jan 29	John Bazeley ..	Alexander Kant
East Indies	*Vice-Admiral Sir* John Gore, K.C.B.	*h*	16 Dec 31	Wm. Cheselden Brown	Richard Haig
Lisbon	*Rear-Admiral* William Parker.............	*i*	9 Sept 31	Wm. Hen. Jervis	Richard Hallilay
Cape of Good Hope and Coast of Africa	*Rear-Admiral* Fred. Warren	*k*	5 Aug 31	Rd. L. Warren ..	John P. Lamey

The Royal Navy in Commission.

⁂ S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

Actæon, 26—Hon. F. W. Grey, 6th Oct. sailed from Malta for Tripoli.

Ætna, S. V. 6—Com. E. Belcher, 9th Dec. at Oporto.

Alban, St. V.—Woolwich.

Alert, 18—Com. J. C. Fitzgerald, Pacific.

Alfred, 50—Capt. R. Maunsell, 20th Sept. Alexandria

Algerine, 10—Com. Hon. J. F. F. De Roos, 12 Oct. at Bahia.

Alligator, 28—Capt. G. R. Lambert, 13th Aug. Madras.

Arachne, 18—Com. W. G. Agar, 15th Nov. Port Royal.

African, St. V.—Lieutenant Kennedy, Plymouth.

Ariadne, 28—Capt. C. Phillips, 14th Nov. Halifax.

Asia, 84—Capt. P. Richards. Flag Ship, (*i*) Tagus, 11th Dec.

Astrea, 8—Capt. W. King, Falmouth.

Athol, Troop Ship—Mr. A. Karley, 4th Dec. sailed for Dublin.

Badger, 10—Com. G. F. Stowe, 15th Sept. Mauritius.

Barham, 50—Capt. H. Pigot 5th Oct. at Malta. Flag Ship (*e*).

Beacon, (late Meteor,)—Com. R. Copeland, 5th Oct. Gibraltar.

Beagle, 10—Com. R. Fitz-Roy, 1st Oct. Monte Video.

Belvidera, 42—Capt. Hon. R. S. Dundas, 4th Oct. left Malta for Tripoli.

Blanche, 46—Capt. A. Farquhar, K. H. C. B. 10th Oct. sailed for Trinidad, Barbadoes

Brisk, 3—Lieut. J. Thompson, 28th Oct. Ascension.

Britannia, 120—Capt. P. Rainier, 11th Dec. Tagus.

Briton, 46—Capt. J. D. Markland, C. B. 11th Dec. off Oporto.

Caledonia, 120—Captain J. Hillyar, Tagus, 11 Dec.

Carron, St. V.—Lieut. J. Duffill, Falmouth.

Castor, 36—Capt. Rt. Hon. Lord John Hay, North Sea.

Challenger, 28—Capt. C. H. Freemantle, 1 Aug. sailed for Swan R.

Champion, 18—Com. Hon. A. Duncombe, 2 Nov. arr. Gibraltar.

Charybdis, 3—Lieut. R. B. Crawford, ar. Gambia.

Childers, 18—Commander R. Deans, 12th Nov. arrived at Portsmouth. North Sea.

Clio, 18—Com. J. J. Onslow, 24th June, at Valparaiso.

Columbia, St. V. 2—Lt. R. Ede, Woolwich.

Columbine, 18—Com. O. Love, 12th Aug. Halifax.

Comet, St. V.—Sheerness.

Comus, 18— (late Comet) Com. W. Hamilton, Plymouth.

Confiance, St. V.—Plymouth.

Conway, 28—Capt. Eden, North Sea.

Cordelia, 10—Com. C. Hotham, 5th Oct. Smyrna.

Cruizer, 18—Com. J. Parker, 13th Dec. ar. Portsmouth.

Curaçoa, 26—Capt. D. Dunn, 3d June, at Trincomalee.

Curlew, 10—Com. H. D. Trotter, 26th Aug. left Cape for Mauritius.

Dee, St. V.—Com. R. Oliver, Sheerness.

Dispatch, 18—Com. G. Daniell, 15th Oct. Sailed for Jamaica.

Donegal, 74—Capt. J. Dick. Flag Ship. (*d*) North Sea.

Druid, 46—Capt. S. Roberts, Portsmouth.

Dublin, 50—Capt. Rt. Hon. Lord J. Townsend, 27th June, at Lima.

Echo, St. V.—Lieut. Otway, Oporto, 9th Dec.

Fairy, S.V. 10—Com. W. Hewett, Sheerness.

Favourite, 18—Com. J. Harrison, 6th Aug. Bonny River.

Firebrand—Lieut. Buchanan, Woolwich.

Firefly, 2—Lieut. J. M'Donnel, Cuba.

Firefly, St.V.—Lieut. F. Baldock, Woolwich.

Flamer, St. V.—Lieut. R. Bastard, 30th Nov. left Gibraltar.

Fly, 10—Com. P. M'Quhae, 14th Nov. Port Royal.

Forrester, 3—Lt. W. H. Quin, Chatham.

Gannet, 18—Com. M. H. Sweney, 11th Oct. at Jamaica from S. Martha.

Griffon, 3—Lt. J. Parlby, Chatham.

Harrier, 18—Com. H. L. S. Vassal, Aug. at Bombay.

Hermes, St. V.—Lieut. J. Wright, 5th Dec. left Portsmouth.

Hornet, 6—Lieut. F. R. Coghlan. 20th Oct. sailed for South America.

Hyacinth, 18—Com. W. Oldrey, 30th Nov. ar. Portsmouth.

Imogene, 18—Capt. P. Blackwood, August, Malacca.

Investigator, 16—Sheerness.

Isis, 50—Capt. J. Polkinghorne, Flag Ship, (*k*) 13th Oct. Cape.

Jupiter, *Troop Ship.* Mr. R. Easto, 1st Dec. Plymouth.

Kangaroo, 3—Lieut. J. Hookey, August, Nassau.

Larne, 18, (*late Lightning,*)—Com. W. S. Smith, North Sea.

Leveret, 10—Lieut. W. F. Lapidge, 5th Dec. arr. Plymouth.

Lightning, St. V.—Woolwich.

Madagascar, 46—Capt. E. Lyons, 24th Nov. Trieste.

Magicienne, 14—Capt. J. H. Plumridge, June, at Malacca.

Magnificent, 4—Lieut. J. Paget, Port Royal.

Magpie, *Cutter*—Lieut. J. Moffat, Sheerness.

Malabar, 74—Capt. Hon. J. Percy, 7th Dec. Spithead.

Mastiff, 6, S. V.—Lieut. J. Graves, Archipelago.

Melville, 74—Capt. H. Hart, 13th Aug. at Madras. Flag-ship. (*h*)

Messenger, St. Transp.—Lieut. B. Aplin, Chatham.

Meteor, St. V.—Lieut. Symons, 21st Sept. Malta.

Minx, 3—Lieut. G. G. Miall, Bahamas.

Nautilus, 10—Com. Rt. Hon. Lord G. Paulett, 9th Dec. Oporto.

Nimble, 5—Lieut. J. M. Potbury, Bahamas.

Nimrod, 20—Com. Lord E. Russell, Tagus.

North Star—Capt. W. Paget, 20th Nov Barbadoes.

Ocean, 80—Capt. S. Chambers. Flag-ship, (*a*) Sheerness.
Onyx, 10—Lieut. A. B. Howe, Plymouth.
Orestes, 18—Com. W. N. Glascock, Oporto, 9th Dec.
Pallas, 42—Capt. W. Walpole, 15th Nov. Port Royal.
Pearl, 20—Com. R. Gordon, 9th Sept. Port au Prince.
Pelican, 18—Com. J. Gape, 24th Oct. left Corfu.
Pelorus, 18—Com. R. Meredith, 13th Oct. Simon's Bay.
Philomel, 10—Com. W. Smith, 25th Nov. Gibraltar.
Pickle, 5—Lieut. E. Stopford, Bahamas.
Pike, 12—Lt. A. Brooking, Falmouth.
Pincher, 5—Lt. W. S. Tulloh, Bahamas.
Pluto, St. V.—Lieut. G. Buchanan, Bight of Benin.
Pylades, 18—Com. E. Blankley, 1st Oct. Rio.
Racehorse, 18—Com. C. H. Williams, 2d Oct. sailed for Jamaica.
Rainbow, 28—Capt. Sir J. Franklin, Knt. 5th Oct. at Corfu.
Raleigh, 18—Com. A. M. Hawkins, 11th Oct. arr. Nauplia.
Rapid, 10—Com. C. H. Swinburne, 5th Oct. Sicily.
Rattlesnake, 28—Capt. C. Graham, Valparaiso, May.
Raven, S. V. 4—Lieut. W. Arlett, Oporto.
Recruit, 10—Lt. T. Hodges, Bermuda.
Revenge, 78—Capt. D. H. Mackay, North Sea.
Rhadamanthus, St. V.—Com. G. Evans, North Sea.
Romney, *Troop Ship*, Mr. R. Brown, 25th Nov. arr. Plymouth.
Rover, 1—Com. Sir G. Young, Bart., North Sea. Off the Texel.
Royalist, 10—Lieut. R. N. Williams, 16th Nov. sailed for Oporto.
St. Vincent, 120—Capt. H. F. Senhouse, 11th Dec. Tagus.
Salamander, St. V.—Com. W. F. Austen, Woolwich.
Samarang 28—Capt. C. H. Paget, 10th Oct. M. Video.
San Josef, 110—Capt. R. Curry, Plymouth, Flag-ship. (*c*)
Sapphire, 28—Capt. Hon. W. Wellesley, 14th Nov. Bay of Fundy.
Satellite, 18—Com. R. Smart, North Sea.
Savage, 10—Lieut. R. Loney, Plymouth.
Scout, 18—Com. W. Hargood, North Sea.
Scylla, 18—Com. Hon. G. Grey, 5th Oct at Napoli.
Seaflower—Lieut., J. Morgan. 10th Dec. sailed for Lisbon.
Serpent, 16—Com. Symonds, Portsmouth Station.
Skipjack, 5—Lieut. W. Shortland, Bahamas.
Snake, 16—Com. W. Robertson, Downs.*
Southampton, 52—Capt. J. M. Laws, North Sea.
Spartiate, 74—Capt. R. Tait, North Sea.
Sparrow, *Cutter*—Lieut. C. W. Riley, Portsmouth Station.
Sparrowhawk, 18—Com. Currie, *act.* 9th Nov. left Halifax for Bermuda.
Speedwell, 5—Lieut. W. Warren, 8th Oct. at Barbadoes.
Speedy, *Cutter*—Lieut. J. P. Roepel Plymouth.
Stag, 46—Captain N. Lockyer, North Sea.
Sulphur, 8—Com. W. T. Dance, 12th Dec. arr. at Portsmouth.
Swan, 10—Lieut. J. E. Lane, North Sea.
Sylvia, 1—Lieut. T. Spark, Portsmouth Station.
Talavera, 74—Capt. T. Brown, North Sea.
Talbot, 28—Capt R. Dickinson, C.B. 15th Sept. Mauritius.
Trinculo, 18—Com. R. Booth, 12th Nov. sailed for Mauritius.
Tweed, 28—Com. A. Bertram, 14th Nov. Bermuda.
Tyne, 28—Capt. C. Hope, 30th Sept. Sailed for South America.
Undaunted, 46—Capt. E. Harvey, 15th Sept. Mauritius.
Vernon, 50—Capt. Sir G. A. Westphall, Knt. Plymouth.
Victor, 18—Com. R. Russell, 18th Oct. left Port Royal for Vera Cruz.
Victory, 104—Capt. H. Parker. Flag-ship (*b*) Portsmouth.
Viper, 6—Lieut, H. James, off Tagus.
Volage, 28—Capt. Right Hon. Lord Colchester, North Sea.
Warspite, 76—Capt. C. Talbot, Flag-ship, (*g*) 1st Oct., at Rio.
Winchester, 52—Capt. Rt. Hon. Lord W. Paget, 21st Oct. left Halifax for Bermuda, Flag-ship. (*f*)
Wolf, 18—Com. W. Hamley, August, at Penang.
Zebra, 18—Com. Lord F. Beauclerc, *act.* Aug. at Penang.

* It is much to be regretted, that there are persons, who, heedless of the mischief they occasion, could allow themselves to be so far led away by party spirit, as to spread the recent report concerning the loss of this vessel. Happily, to the discerning it carried its own denial; but it was calculated to occasion the deepest distress to the inexperienced families belonging to those on board of her. Surely there are reasonable bounds at which opposition might stop, and the feelings of individuals belonging to no party, might be spared, and not trifled with in this disgraceful manner.

To the Editor of the Nautical Magazine.

H.M.S. Excellent, Portsmouth,
30th Nov. 1832.

Sir,

You will oblige me by correcting the undermentioned inaccuracies in the statement which appeared in your Magazine of this month, headed "Naval Gunnery, Excellent Practice." When I went on board the Vernon, at Spithead, *she had not been "firing a length of time wide of the mark;"* but was about to fire. In consequence of some observations made during our practice on board the Excellent, I said to the first Lieutenant, who had told me the target was laid out for 400 yards, or point blank, "though your sights are so marked, they will not throw a shot that distance by 60 or 70 yards." The first gun was fired in a very good direction, but it did fall short quite that distance. I then said to the first Lieutenant, We find about one-third of a degree necessary to throw the shot 400 yards: as your sights are not marked in degrees, I will, if you please, set one. I did so, and returned to the quarter-deck; the captain of the gun fired, and the shot fell close to the cask, or struck it. The sights of the remaining guns were then elevated—a few shots were fired—I believe the fourth cut away the cask.

Some conversation passed between the first Lieutenant and myself, which caused me to call two men out of my boat, who calculated and shewed the way of making the tangent scales in degrees. They never were on the Vernon's main deck on that day, and I know they did not fire a gun on board of that ship.

Sir Francis Collier was not on board, and I did not address any officer of the Vernon in the way attributed to me; and it is clear I could not address the men of the Excellent in the way described, for the reasons above stated.

I am, Sir, &c.

T. Hastings.

[We are always desirous of correcting any misstatements which we may be led to make, and are much obliged to Capt. Hastings for setting us right in this matter.]

The following vessels are building, or about to be laid down, in the various dockyards, on the principles of Capt. Symonds, the present Surveyor of the Navy.

At Pembroke—the Collingwood, 78; Vanguard, 78; Cleopatra, 26; Carysfort, 26; Brigs, Harlequin, 16; Lily, 16.

At Plymouth—A line-of-battle Ship, of 78 guns; Pique, 36, and another Frigate; Brigs, Ringdove, 16; Sappho, 16.

At Portsmouth—Brig, Racer, 16.

At Sheerness—Vestal, 26.

At Chatham—Brigs Wanderer, 16; Wolverine, 16.

At Woolwich—Indefatigable, 50; Pandora, Packet.

Those already built, are the Vernon, 50, at Woolwich; Snake, 16, and Serpent, 16, River Thames; Rover, 18, Chatham; Pantaloon 10, purchased.

VARIETIES.

We are enabled to record the following testimony respecting the sailing of the Magicienne. This ship worked out of the channel against a gale of wind, and a heavy head-sea. The following is an extract from an officer on board, dated 10th November, 1831:—

"In the afternoon, when the gale was beginning, and a very fair proportion of sea, she was going 10 knots, close hauled, standing in for the French coast, under double-reefed topsails and courses. She stands up particularly well; her stability is uncommonly increased by razeeing, and her speed also."

Extract of a letter from an officer on board the Rinaldo, on her return from Rio, dated Falmouth, 27th March, 1832:

"The Magicienne sailed from Rio for the East Indies, 5th Jan. 1832; she was the admiration of every one who saw her, and the officers spoke of her in the highest terms as a sailer, sea-boat, and uncommon easiness."

Extract of a letter from another officer on board the Magicienne, dated Madras, 7th May, 1832:—

"The ship is the admiration of every one for her figure, and sailing 10 knots an hour; and in a gale, on her passage to Ceylon, she went at the rate of 12, and in a fresh breeze 13½. She both tacks, stays, and wears well."

The following Midshipmen were examined lately in seamanship, on board H. M. ship Victory, viz.: Mr. Graham, Mr. Pogson, late of H.M.S. Procris; Mr. Alfred Bentall, of H. M. S Excellent, and Mr. Arthur Doyle, late of H.M.S. Crocodile.

The following Midshipmen have been found duly qualified in navigation, on examination at the Royal Naval College:—Messrs. Edward Hardy, late of H.M.S. Seringapatam; Fred. Cannon and R. A. Oliver, of H.M.S. Southampton; H. G. B. Bennett, of H.M.S. Seringapatam; Geo. Beadon, late of H.M.S. Jaseur; Alfred Bentall, of H.M.S. Excellent; and R. J. Dunlop, late of H.M.S. Curlew. After the examination, the above gentlemen dined together at the Star and Garter, where the evening was spent in the greatest harmony and conviviality.

Since the foregoing, Messrs. R. M. Donne, J. H. Julian, and J. Maling, of the Southampton, have also passed their examination.

The Illustrious, 74, was taken into dock lately, for the purpose of being cut down to a frigate. The Buzzard, Termagant, and Lynx, each of 10 guns, are ordered to be cut down, upon the plan of the Brisk and Charybdis, and are intended for the coast of Africa. —*Hants Tel.*

His Majesty has been pleased to confer the honour of the Guelphic Order of Knighthood on Rear Admiral Charles Cunningham. The King has also conferred the honour of Knighthood on Major Francis G. G. Lee, Royal Marines.—*Hants Tel.*

His Majesty has conferred the honour of Knighthood, upon Rear-Admiral the Hon. Courteney Boyle.—*Hants Tel.*

It is intended in future, that Field Officers of Marines shall be attached to each of the principal Foreign commands. One will proceed in the Vernon to the American station. Major Woolrige is to join the Melville in the East Indies; another will be sent to the Mediterranean; and a fourth will join the Spartiate for the South American Station.—*Hants Tel.*

A light is about to be erected on the Prawle Point, near the Start Head-land, which will be of peculiar advantage to vessels passing up the British Channel from the Atlantic, as it will frequently prove the first light or signal of land made after a long voyage.—*Ports. Her.*

Extract of a letter from Simons Bay, Cape of Hope, dated 6th Oct. 1832:—"By his Majesty's ship Isis, which reached this Bay 27th ult. we learn the loss of the Borneo whaler, at the north part of the Mozambique channel. It appears that on the 22d of July, at half-past 10 o'clock in the evening, the Borneo struck on an unknown coral shoal, in lat. 12° 14′ S. lon. 46° 7′ E.: all efforts to get her off proved ineffectual, and the officers and crew left her in boats, with what water and provisions they could pick up, in haste. Captain Ross, the Doctor, and one seaman remained on the wreck during the night, and in the morning, finding it impossible to continue, lowered the only remaining boat to get away. Capt. R. and the seaman had no sooner got into it, when a sea struck, and knocked the boat to pieces; Capt. Ross was pulled out of the water by the hair of the head, completely exhausted; the seaman, being a better swimmer, reached the boats also. The Doctor lowered himself from the jib-boom end into one of the boats, and, all being now clear, they stood for the island of Johanna, then about 100 miles off, short of water and provisions, where they reached the third day after. Had not the Isis touched at the island, it is more than probable that all of them would have perished, as the place was unhealthy, six having died on board the Isis, and 14 have been placed in the Naval Hospital. The Borneo had been very successful, having 1950 barrels of whale and sperm oil on board, and nine tons of whalebone. At the time they left, the water was over the lower-deck and the sea making a clear sweep over the ship. *Hants Tel.*—See art. 5, *Hydrog.*

Hull, 11*th Dec.* 1832.—We have an account of the Davis Straits and Greenland Whale Fishery for 1832. It appears that 81 ships had been employed, of which five, viz.—the Ariel and Shannon of Hull, the Egginton of Kirkaldy, Juno and William Young of Leith, were lost. The produce of this fishery has been 12,578 tuns, of 252 gallons each, and the quantity of whalebone was about 670 tons weight, valued at about £100,000. The value of the oil was £250,000. The number of seaman employed was nearly 4,000.—*Hull Paper.*

The following is a copy of the Official Report made to Sir Pulteney Malcolm, of the accident which occurred to the Southampton, by lightning, on the 5th instant:—

H.M.S. Southampton, Downs,
Nov. 6, 1832.

"In a squall at one P. M. yesterday, we were struck with lightning, the electric matter first taking the heel of the mizen-top-gallant mast, (which was housed,) setting fire to the paunch mat on the mizen topsail yard, then running down the mizen mast until checked by the sheet of copper in wake of the boom, which partially dispersed it, taking a considerable piece of the mizen mast; seriously injuring Stephen Elgar and John Gibson, Yeoman of the Signals; starting the oak planks and copper bolts about the wheel, it got on to the main deck, and there took a copper bell-pull at the cabin door, which conducted it through ten of the quarter-deck beams, four of which are a good deal shook, and all the lining of the skylight, mast, and other joiners' work in its course torn down: the stream of electric matter appears to have divided when it took the bell-pull; part of it running across the deck, shivering a box of grape-shot to atoms, and, singular to say, put a 24 pounder shot in a partial state of fusion, it descended to the gun-room by a bolt in the water-way on the larboard side, and then got hold of the gun-room bell-pull, which carried it over to a cabin on the opposite side, where it exploded, shivering to pieces all shelves, boxes, &c. In my cabin, the explosion was like that of a large quantity of powder: the after part of the ship was so filled with smoke, that at first I was under some apprehension the ship was on fire, and took precautions accordingly. We have hooped and fished the mizen mast with one of the iron fish-plates for the fore or main mast, and tie-bolted the beams, all of which I consider now in a state of security. The men who were hurt are doing well. Two water-spouts appeared in the squall."—*Hants Tel.*

The four-oared galley belonging to the Coast Guard Station at Dungeness, having been sent off to board a Dutch vessel off the Ness, was returning, when, one of the oars slipping overboard, two or three of the men, anxious to save it, leaned on one side, when she instantly filled and capsized, in consequence of which one chief boatman and two of the crew met with a watery grave: the other two, with great difficulty, reached the shore, almost insensible, but have since recovered; the bodies of the unfortunate men who were drowned have been picked up, and were on Monday intered at Lydd.—*Ports. Her.*

The sloop Dartmouth, of Dartmouth, during a late heavy gale of wind from S.S.E. with thick misty rain, was discovered to have driven on shore, at Camber, near Rye, Sussex, there being a heavy sea on the sands; six persons, including a female passenger, were washed overboard immediately after her taking the ground; one, ascending the rigging, was rescued from a watery grave; owing to the prompt and indefatigable exertions of the officers and crew of the Coast Guard station at that place, who displayed the greatest courage in launching a boat through a tremendous sea. Her cargo, consisting of bale goods, leather, &c., has been partly saved, but the vessel has become a perfect wreck. The bodies of the unfortunate sufferers have all been picked up, and buried at Lydd, in Kent.

By the upsetting of the Childer's boat on her return to Spithead lately, when near the ship, we regret to say, that Mr. Lowther, midshipman, a young man of promise, was unfortunately drowned, together with one seaman; the remaining one, happily, after considerable exhaustion, regained the ship, and was saved.

A steam-vessel was launched at Elizabeth Town, near Pittsburg, on the 18th ult., which is said to be the largest on the Western waters. She has a keel 173 feet, and will carry 800 tons, besides engine, &c. Her cabins are so arranged, that they can he thrown together by opening the folding doors, and they measure 170 feet in length. She will be propelled by an engine of 250 horse power, and is destined to run between New Orleans and Louisville.—*Hants Tel.*

We are happy to observe that a liberal subscription is going forward in the Isle of Wight, to purchase a piece of plate, to be presented to Mr. John Dennett, for his invaluable invention of the rockets which were of such signal service in saving the lives of the whole of the crew of the ship Bainbridge, which was wrecked off Atherfield, during the gale of wind on the 7th and 8th November. Lieut. Thomas Hewett, of the Royal Navy, has been the principal promoter of this subscription, and we trust that his example will be generally followed by his brother officers at this port, he being a man of science himself, and the inventor of the horizontal exploding shot and shell, lately laid before the Lords of the Admiralty, consequently capable of properly appreciating the value of Mr. Dennett's discovery. Subscriptions received at Messrs. Grant's bank. —*Hants Tel.*

It may not perhaps be generally known, that no Naval Assistant-Surgeon is eligible to pass for Surgeon without having completed one year's active service at sea.—*Hants Tel.*

On the Improvement of Youghal Harbour, by Mr. J. Jones, civil engineer.—In the appropriation of money for public works, the principal consideration should be, to produce the greatest possible advantage at the least possible expense, and cause not only temporary benefit to the people from the outlay of capital, but also a permanent source of profit, from the formation of new channels through which the efforts of the industrious may flow with increased facility.

Aware of the intention of Government to forward the execution of public works in Ireland, and thus call the latent energies of the country into play, I presume to direct its attention to a suggestion for improving the Harbour of Youghal; an undertaking which, at small expenditure, would greatly conduce to the advantage of the town, and its populous environs. In the Statistical Survey of the County of Cork, it has been erroneously stated, and the delusion supported by interested persons, that this harbour is not only dangerous, but also incapable of admitting large vessels—an idea which, if it has not caused the commerce of the town to retrograde, has at least prevented its advancement, and has rendered nugatory, as far as relates to the communication by steamers, the situation it enjoys of being within about twenty-four hours' sail of Liverpool and Bristol.

Having minutely examined the harbour, in conjunction with Lieutenant Scudamore, R. N., and sounded and bored the channels, I transmit the following statement of the depth of water at the lowest spring-tides, both on the bar and channels, although I fear the former is too distant and extensive to be operated upon by any works on the shore, of reasonable magnitude.

No doubt, however, exists, but, by buoying and dredging, it can be greatly improved, as there is sufficient water in the Eastern channel, after the first quarter of the tide, (or one hour and half of time,) to admit vessels drawing 14 feet water. For in this harbour there is a great peculiarity observable in the tide—of rising one half of its height in the first quarter on the flow—a circumstance mentioned in Smyth's History of the County of Cork, and which my actual observation has evinced to be correct. This authentic fact (if generally known) should be quite sufficient to secure for the port a more favourable name than it has hitherto borne in the commercial world. From this unusual progression of the tide, persons trading to Youghal could calculate with precision the required time of entering, and safely stand for the harbour with the perfect assurance of finding 17 feet water in the Eastern channel in 1½ hours after the commencement of the flood; for, as at the lowest low-water mark, there is 9 feet water there, and the tide rises on this coast 16 feet, the half of its height is consequently 8 feet, which added to 9, makes the 17 feet water alluded to.

The bar of this harbour is very extensive, and principally composed of honeycomb rocks, running from East to West across the mouth, and leaving a distinct channel at either side between it and the headlands. The first thing, therefore, I should recommend would be, simply buoying the channels and marking the rock of the bar, which in its present state, is most dangerous to those unacquainted with the port.

That this project would invigorate the resources of Youghal, and its extensive vicinities, and prove an incentive to exertion, and consequently encreased wealth, does not admit of a doubt. Steamers would soon find it profitable to ply to this harbour—by which means a sure market would be secured for the goods of the farmer, and individual riches become the basis of national wealth.

Were this proposed improvement to depreciate the trade of any adjacent place on the sea-coast, it might appear invidious thus to elevate one part of the country at the expense of another; but all such apprehensions are groundless: for it is a maxim in political economy, that new resources arise in proportion to the new vents for their transmission, and increased demands are met by increased produce.

Another permanent benefit to the entire South of Ireland, almost certain to emanate from the improvement of Youghal harbour, would be the opening, by means of an already projected rail-road, the valley of the river Blackwater. The objects of the following prospectus, which I here subjoin, have already engaged the serious attention of the gentlemen of the county.

It is proposed to open the fine valley of the river Blackwater which arises in the vicinity of the Lakes of Killarney, and, after running seventy miles, discharges itself into the Youghal Bay in the Irish channel, within twenty-four hours' sail of Bristol and Liverpool. This valley is without any impediment to either a canal navagation or rail road.

On the banks of this river, and in the immediate vicinity of the valley, there are twenty-six towns of consideration, in their size and the number of their inhabitants viz: Youghal, Lismore, Cappoquin, Tallow, Fermoy, Mallow, &c. &c. The western part, which includes some of the principal towns along the line, is within fifteen days' sail of the best markets of America.

The upper part of the valley is a large coal field—the lower part is the finest lime-stone corn district in Ireland. Besides possessing inexhaustible collieries, lime-stone quarries, good land, and cheap labour, the country is well supplied with wool, flax, and other raw materials for manufacture, excellent potter's clay, brick, and fine clay, and has the advantage of combining steam and water power on the most moderate terms, and requires only a facility for combining its resources, and suitable situations, to have them immediately turned to profitable account.

To effect these purposes, as well as to give employment to the neglected poor in the centre of the great forfeited country between the Blackwater and the Shannon to the amount of one million acres, now belonging to the Crown, the Church, the University of Dublin, and the Lords Cork, Egmont, Arden, &c. and other English absentees, the Parliaments of Ireland made large grants, as will be seen by references to the Acts of 33d Geo. II. Vol. vii., stat. 619; 1st. Geo. III. Vol. vii; 799. for an instant navigation through the valley of the Blackwater, from the sea to the Collieries of Dromage and Dysart, situate above Mallow, on the confines of Cork, Kerry, and Limerick, and in the centre of the above estates.

The collieries named in these acts of Parliament contain fifteen beds of coal and culm from two to twenty feet thick, running parallel through there estates for three miles; and if a circle of twenty miles' diameter be drawn round them, it will contain 201,062 Irish acres, having all the above advantages already stated.

It is thus that agriculture and manufactures, the two great resources of wealth, may be made to promote and assist each other; and the result of affording a fair support to the extensive capabilities of this district would be, that its steam and water power, its collieries, limestone quarries, its potteries, and cheap labour, would become the means of constant profitable agricultural, mining, and manufacturing employment to an immense population, and of permanent and increasing national wealth.

Reverting again to Youghal harbour, a subject the reader may imagine me to have overlooked by the foregoing digression, which in reality, however, is intimately associated with it, I deem it but judicious to produce documents conducing to unveil the errors of former opinions respecting this harbour, or elucidating advantages it possesses, which have been hitherto completely unnoticed. To instance the poor opinion, inaccurately formed, of Youghal harbour, I shall adduce the following circumstance, coming to my knowledge as inspecting engineer of the bridge now nearly completed in the place:—When this extensive bridge was commenced, the contractors were desirous to have the vessels conveying timber insured; but, on application at Lloyd's in London, they found that many of the brokers would not on any account effect an assurance; and the few that would, required so large a premium, as induced the contractors to forego their intention. The sole reason alleged for this hesitation in effecting the insurance was, the dangerous nature of the harbour. The most convincing argument that can be offered against this prejudice, is the fact, that, for years, no vessels have been lost in this port, and but few instances are upon record of such casualties taking place there.

The list [subjoined in appendix] of vessels drawing *twelve feet water and upwards*, that have entered into Youghal since January last, will prove the utter incorrectness of Reid's Coaster's Guide, which states no vessels drawing more than twelve feet can enter the harbour, and that only at highest spring tides. Reid also mentions that the bar runs South, and completely across the mouth of the harbour. This is quite erroneous—it runs nearly East and West, *and there are two channels*, the eastern one having always six feet more water than is on the bar, and capable of being kept at least three feet deeper by occasionally dredging the sandy bed which at present is accumulated there.

Since such material advantages connected with Youghal harbour have been hitherto overlooked, it is but reasonable to suppose that it possesses others yet undiscovered, which the friendly light of improvement will render apparent. The new bridge of Youghal, which will shorten the communication between that town and Waterford sixteen miles, is a work which cannot but materially benefit the place; but how considerably would those advantages be augmented, were the port rendered so secure as to induce the influx of marine intercourse. The Light-house, which it is contemplated to erect on Cable Island, however ultimately conducive it must be, the harbour of Youghal would not, I feel confident, prove of near so much service, were the improvement of the harbour neglected, and no measures adopted to effect such a desirable object.

I imagine sufficient circumstances are now detailed, to make the situation of this harbour a subject worthy the consideration of that committee to which Government has consigned the appropriation of the money designed to be laid out in Ireland on works most likely to entail lasting benefit to that country.

JOHN JONES,
Civil Engineer.

LIST OF VESSELS.

Names.	Where belonging.	Tons.	Draught of Water
Brilliant	Youghal	145	12½ feet
Diligence	Milford	121	12
Caroline	Ilfracombe	131	13
Happy Return	Dartmouth	128	12
Canarus	Nantz	159	13
Castor	Workington	200	13½
Aaron	Swansea	124	13
Cabinet	Waterford	161	13
New Blessing	Swansea	138	13
Friends	Bideford	121	12
Zorilda	Cork	146	12
Samson	Milford	150	13
Finley	Scarboro'	210	13
Down Castle	Scarboro'	149	14
The Anne	Scarboro'	233	13
John Campbell	Cork	349	15
Mars	Milford	135	13
St. Andrew	Kirkcudbright	135	13
Hibernia	Kinsale	128	12

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Captains—T. Dickinson, (v.) J. Marshall.

Commanders—J. J. Allen; R. C. Curry.

Lieutenants—J. J. Ellman; A. Goldie; Hon. A. W. Monckton; G. Rose; J. L. R. Stoll.

Surgeons—R. H. Brown; J. W. Johnston, M.D.

Purser—J. F. Collings.

ROYAL MARINES.—*Captain*—G. B. Puddicombe. *First Lieut.*—E. Rea.

Appointments.

Vice-Admiral Sir George Cockburn, G.C.B. has been appointed Commander-in-Chief of the North American and West India station.

Alban, St. V.—*Lieut.* A. Kennedy.

Britannia, 120—*Assist. Surgeon* W. F. Clark.

Calypso Packet—*Assist. Surg.* R. M'Lean.

Castor, 36—*Lieut.* M. F. Brownrigg.

Childers, 18—*Lieut.* W. Houston.

Comus, 18—*Lieut.* C. J. P. Campbell.

Cruizer, 18—*Lieuts.* J. J. M'Donnel, J. Boroughs.

Curacoa, 26—*Lieut.* J. Loring.

Coast Guard—*Com.* E. Handfield; *Lieuts.* T. Edwin, A. Kortright.

Druid, 46—*Capt.* S. Roberts; *Lieut.* C. E. Powys. *Mar. 1st Lieut.* E. Bathurst; *2d Lieut.* J. P. N. F. Claperton; *Mid.* R. Curtis.

Firebrand, St. V.—*Purser* W. Thompson; *Surg.* Sir J. S. Anderson, Kt.

Firefly, St. V.—*Purser* J. Collins; *Assist. Surgeon* J. H. Jones.

Haslar Hospital—*Assistant-Surgeon* G. Moore.

Hyacinth, 18—*Purser* J. Snow.

Isis, 50—*Lieuts.* J. Pike, A. F. Goldie; *Mid.* J. Miller; *2d Master* A. M. Parsons; *Master's Assist.* C. Airey.

Lotus, *Convict Ship—Surg.* H. Brock, M.D.

Magpie, 4—*Assistant-Surgeon* G. F. Rowe.

Magnificent, 4—*Surg.* R. H. Brown.

Maitland, *Transport—Master* C. Pope.

Malabar, 74—*Lieut.* T. G. Forbes; *Assist. Surg.* T. Scott, M.D., P. Niddrie.

Mangles, *Convict Ship—Surg.* J. Rutherford, M.D.

North Star, 28—*Captain* Lord William Paget.

Numa, *Transport—Lieutenant* W. J. Woodman.

Pelorus, 18—*Master* G. H. Head.

Portlnd, *Convict Ship—Surg.* C. Inches, M.D.

Revenge, 78—*Assist. Surg.* J. Rees.

Renard, *Packet—Assistant-Surgeon* W. B. Wilks.

Rodney, 92—*Carpenter* Mr. Martin.

Royalist, *Packet—Assistant-Surgeon* J. Ferrier.

Rinaldo, *Packet—Assist. Surg.* A. Air.

Sapphire, 28—*Capt.* Hon. W. Trefusis.

Salamander, St. V.—*Com.* W. F. Austen *Lieut.* H. Parkinson, A. W. Milward; *Surgeon* G. J. Todd; *Purser* J. T. Duffill.

San Josef, 110—*Super. Com.* W. Mudge; *Super. Lieuts.* G. A. Frazer, J. Harding.—*1st Lieut. Mar.* E. Nepean.

Serpent, 16—*Surg.* W. M. M'Cluer.

Snake, 16—*Master* J. Gule.

Speedy, 8—*Assist. Surg.* J. S. Hampton.

Spartiate, 76—*Mast. Assist.* J. W. Paul; *Mate* J. Sankey.

Sulphur—*Surg.* J. W. Johnstone, M.D.

Talavera, 74—*Mate* J. W. Morgan.

Talbot, 28—*Master* R. Brown.

Undaunted, 46—*Lieut.* A. Dickson, *Act.*

Vernon, 50, Flag-ship of Vice-Admiral Sir G. Cockburn—*Capt.* Sir G. A. Westphall, Knt.; *Com.* J. A. Brasier; *Lieuts.* Hon. W. B. Devereux, J. S. Foreman, H. L. Maw, W. A. Willes; *Super. Lieuts.* R. A. Bradshaw, C. J. Campbell, Sir P. Parker, Bt.; *Flag-Lieut.* H. G. Hamilton; *Master* J. R. Mayne; *Surg.* A. Nisbett, M.D.; *Assist. Surgs.* C. H. Fuller, J. B. Hatton, P. Toms; *Mate* J. F. Starke; *Mids.* E. H. Alston, J. T. Caldwell, G. Giffard. *Admiral's Sec.* T. Woodman; *Chaplain* J. Baker; *Clerks* Mr. Little, Mr. Jeffry.

Victory, 104—*Assist. Surg.* D. F. Maxwell; *Mid.* C. O. Hayes.

Winchester, 52—*Lieut.* J. L. Sholl.

Royal Marines.

Chatham Division.—*First Lieutenant*—A. Anderson.

Portsmouth Division.—*Second Lieut.*—T. D. Forbrooke.

Plymouth Division.—*Capt.*—H. J. Delacombe. *First Lieut.*—J. Toby. *Second Lieut.*—A. H. Stevens, E. Rea.

NEW MERCHANT VESSELS. FROM LLOYD'S REGISTER FOR 1832.

Reported to 20th December.				*Reported to 20th December.*			
VESSELS.	RIG.	WHERE BUILT	TONS.	VESSELS.	RIG.	WHERE BUILT	TONS.
Alexander	Schooner	Scotland	70	Hannibal	Schooner	Anstruther	130
Anne and Catherine	Schooner	Bangor	81	Hellas;	Schooner	Waterford	209
Betsey	Brig	Bideford	120	James Crawford	Smack	Ramsay	51
Betsey	Schooner	Exmouth	79	Lucretia	Brig	Yarmouth	133
Brandon	Schooner	Cardiff	136	Mary Ann	Sloop	Knotingly	51
Britannia	Brig	Appledore	103	Medway	Brig	Sunderland	210
Caroline	Brig	Shields	285	Pomona	Smack	Cowes	88
City of Norwich	Schooner	Lowestof	75	Renown	Barque	Sunderland	325
Columbus	Ship	Whitby	472	Rhydeol	Brig	Wales	155
Corsair	Barque	Whitby	265	Santa Maria	Snow	Yarmouth	200
Emerald	Schooner	Brixham	88	Sarah& Maria	Brig	Waterford	181
Fairie Queen	Sloop	Dumbarton	68	Vectis	Smack	Cowes	73
Greyhound	Schooner	Yarmouth	137	Water Witch	Smack	Bideford	34

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1832.

Continued from page 558 of Vol. I.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
1 Agnes	Owens	Newry	London	Padstow	29 Nov.	6800 Most saved.
2 Amelia	Harries	Cork	Newport	C. Wales	11 Nov.	6798 Crew saved.
3 Blossom	Williams	Newry	Troon	Ayr	29 Nov.	6800 Crew saved.
4 Borneo	Ross	—	—	Mozam. chan	22 July	6802 Crew saved.
5 Caledonia St. V.	—	Hull	Goole	Goo'e R.	23 Nov.	6798 Crew, &c. sd
6 Ceres	—	—	—	Off Ostend	5 Dec.	6802 Said to be.
7 Clyde	Robertson	Belfast	Demerara	Maiden rocks	21 Nov.	6798 Crew saved.
8 David	Gillmour	—	—	St. Lawrence	7 Nov.	6802 C. St. Ann
9 Eliza	—	Hastings	—	Rob. Hood's Bay	4 Dec.	6800 Crew saved.
10 Emperor Alexander	Mc Kinnon	Quebec	Dublin	Arklow B.	22 Nov.	6798 Crew saved.
11 Faith	—	Newcastle	Exeter	North Sea	3 Dec.	6801 Fnd. crew sd.
12 Fame	Mc Alpine	Ballyraine	Glasgow	Dimaff Hd.	3 Dec.	6801 Total, by fire.
13 Female	Mearns	—	—	Huntley Foot	5 Dec.	6801 Fnd. crew sd.
14 Gleaner	Cumming	Quebec	Cork	45 N 34 W	22 Nov.	6798 Abandoned.
15 Helena	Jackson	Shields	—	Off Hamb. H.	28 Nov.	6800 Abandoned
16 Henry	Walker	Shields	New York	I. Jura	3 Dec.	6803 Crew saved.
17 Henry	Wilson	Conway	Sunderland	Peterhead	29 Nov.	6800 Crew saved.
18 Hero	England	Bideford	Miramichi	Magdalen II.	4 Oct.	6798 Crew saved.
19 Howick	—	Narva	London	Off Narva	4 Nov.	6798 Crew saved.
20 Ibbetsons	Middleton	Archangel	London	Off Bergen	2 Nov.	6800 Crew, 8 saved
21 Iphigenia	Sinclair	StJohnsNF	Newry	Holy Head	3 Dec.	6801 Stranded.
22 Jeremiah	Binney	Leith	Bristol	Maryport	4 Dec.	6801 On shore.
23 King George Packet	Whittingham	Shields	—	—	Nov.	6800 Abandoned.
24 Latona	Gilles	Workingtn	—	—	16 Nov.	6799 Run down, cw saved
25 Lowther	—	Yarmouth	Selby	Dudgeon	—	6802 Steamer.
26 Lyons	—	Liverpool	B. Ayres	M. Video	12 Sept.	6803 Crew saved.
27 Malta	Williams	Miramichi	Wexford	Wexford	22 Nov.	6798 On the bar.
28 Mary	M'Queen	—	—	I. Ornsey	28 Nov.	6803 Of Inverness.
29 Mary	Of Kincardine	—	—	Off Shields	4 Dec.	6801 Fnd. crew sd.
30 Neptune	Hayes	—	—	Corton Snd.	20 Nov.	6797
31 Newbiggin	—	Sunderland	—	Off Huntley Foot	17 Nov.	6799 Crew saved.
32 Northumberland	Carneby	Seaton Sl.	London	Whiting S.	29 Nov.	6799 Crew saved.
33 Oldham	Johnson	Whaler	Reported	Wallace I.	June	6801 Cw kd.by nat.
34 Olive Branch	Peters	Seville	London	Nr Boulogne	28 Nov.	6799 Crew saved.
35 Providence	Evans	Mostyn	Nevin	Off Holy Hd.	24 Nov.	6798 Crew saved.
36 Resolution	Garlinge	Shields	Lynn	Doubtful	Dec.	6801 3 saved.
37 Rival	Wallace	—	—	Galway	4 Dec.	6801 All lost.
38 Ship	Name	unknown	—	I. Mull	1 Dec.	6803 Timber laden.
39 Sisters	Patterson	Aberdeen	Newcastle	Off Troup H.	28 Nov.	6802 Crew saved.
40 Snapdragon	—	Dartmouth	—	Off Dartm.	3 Dec.	6800
41 Sultan	Sanderson	Miramichi	New York	G. St. Lawr.	26 Sept.	6800 Crew saved.
42 Superb	Dempsey	Glasgow	Sligo	Off Sligo	26 Nov.	6799 On shore.
43 Susan&Mary	Fairweathr.	Bilbao	London	Off I. Wight	25 Nov.	6798 Run foul of.
44 Swiss	—	London	—	—	28 Nov.	6799 Run d. cw. sd.
45 Thompson	Langley	—	—	Saltholm	27 Nov.	6801 On shore.
46 TwoBrothers	—	—	—	—	—	
47 Union	Mullens	—	—	St. Petersberg	Nov.	6803 Doubtful.
48 Unity	Ramsay	—	—	Pentld. Sker.	14 Nov	6799 Of Berwick, crew saved.

Ships' Stores.—It may be necessary at this period to remind those who may be engaged in fitting out vessels for the Greenland and Davis' Straits fisheries, that, by a recent order in council, considerable relaxations were made in regard to stores allowed for ships' use. The following information connected with this subject may be useful. A vessel with forty men on board can take from bond:—If going to Greenland, of coffee or cocoa, 675lbs. If to Davis' Straits, 900lbs. Of raw sugar or molasses, 900lbs. to 1,200lbs. Of wine 135 galls. to 180 galls. Of fruit, as almonds, currants, dates, figs, prunes, or raisins, 2,040lbs. to 2,720lbs. The duty on the articles enumerated is:—On coffee, 6d. per pound; cocoa, 4d. per pound; sugar, 24s. per cwt.; wine, 5s. 6d. per gallon; currants, 14s. per cwt.; prunes, 27s. 6d. per cwt. The saving is easily calculated.—*Tyne Mercury.*

VESSELS DETAINED BY ACCIDENTS, &c.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE DETAINED.	WHEN.	PARTICULARS.
Alert	Tuscan	Falmouth	Figuera	Lisbon	24 Nov.	6800 Dismasted.
Boulby	——	Whitby	——	Scarborough	21 Nov.	6797 In harbour.
Corsenside	Pearson	Petersburg	London	Holm Sound	21 Nov.	6797
Enterprize	——	Cadiz	London	Ramsgate	2 Dec.	6800 Damaged.
Gem	——	Liverpool	Demerara	——	——	
Gem	——	Liverpool	Newfoundld	Liverpool	21 Nov.	6797
George	Cornforth	Petersburg	London	——	7 Nov.	6797 Been aground
Gov. Douglas	——	Helvoet	StJohnsNB	Cork	18 Nov.	6797
Hope	——	——	——	Nr Liverpool	4 Dec.	6801 On shore.
Hope	Gullen	London	Petersburg	Copenhagen	27 Nov.	6801 Damaged.
Mary	Houston	Quebec	Cork	Quebec	Sept.	6800 Been aground
Mary Ann	Sedley	——	——	Miramichi	17 Nov.	6801 On the bar.
Navarino	Craggs	Liverpool	New York	Crookvan	10 Nov	6798 Leaky damag
Phœnix	Mahon	Calcutta	London	Penang	7 July	6800 Damaged.
Thos. Richardson	——	Stockton	——	Scarborough	20 Nov.	6797 On shore.

VESSELS SPOKEN AT SEA.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE SPOKEN.	WHEN	PARTICULARS.
Addingham	——	London	Bengal	11 N 87 E	12 July	6797
Ann	——	London	Trinidad	26 N 21 W	5 Nov.	6799
Canada	——	Liverpool	New York	48 N 40 W	30 Nov.	6803 By the Eagle
Cook	——	Bristol	Mauritius	4 S 31 W	20 Oct.	6803 By Mary-Ann
Faith	——	Lisbon	Newfoundld	46 N 52 W	2 Nov.	6797
Fame	——	Poole	Newfoundld	49 N 38 W	6 Oct.	6797
Johns	——	Dundee	——	46 N 55 W	17 Oct.	6797
Jona	Smith	London	Montreal	49 N 56 W	24 Oct.	6799
Julia	——	Poole	Newfoundld	49 N 35 W	7 Oct.	6797
Lady Ann	——	Liverpool	Philadelphi	42 N 45 W	3 Nov.	6797
Mary-Ann	Hornblow	London	Madras	10 S 31 W	13 Oct.	6798
Mary Catherine	——	Liverpool	New York	43 N 33 W	25 Nov.	6803 By the Bristol
Mercury	——	Poole	Newfoundld	48 N 44 W	5 Nov.	6797
New England	Atkins	Liverpool	Charleston	23 N 64 W	7 Nov.	6803
Patriot King	Pinder	Liverpool	Bengal	21 S 34 E	25 June	6801
Phœnix	——	Bilbao	Newfoundld	46 N 10 W	5 Dec.	6803 By Reindeer
Rainbow	——	Cette	Rio Janeiro	7 N 25 W	14 Oct.	6803
Robert	Ewart	Bristol	Newfoundld	47 N 19 W	20 Nov.	6801 By Hebe
Rosehill	——	——	St.Andrews N. B.	43 N 52 W	9 Oct.	6798
Royal Saxon	——	Liverpool	Savana	38 N 49 W	31 Oct.	6797
Solway	Pavetor	London	Manilla	26 S 37 E	26 Aug	6803
Virginia	Harris	Liverpool	New York	43 N 45 W	1 Nov.	6797
York	Sprattly	Plymouth	V. D. Land	4 N 23 W	15 Oct.	6803

The celebrated blind traveller, Holman, has returned to this country, after an absence of five years, during which time he has circumnavigated the globe, and travelled on the continents of Asia, Africa, America, and Australia, and through the islands of Mauritius, Ceylon, and Van Diemen's Land. He has also visited China, besides the islands of Madeira, Teneriffe. St. Jago, Fernando Po, Ascension, Madagascar, and a great many other remarkable places. The account of his travels, the publication of which we may of course anticipate, will, no doubt, be sought after with considerable interest and anxiety; but, for our own parts, we should be led to refer to them more for the sake of curiosity than with any view of receiving that instruction which we should expect from the publication of authentic information, by one who is in possession of all his senses. We use the word authentic, because Mr. Holman speaks merely from hearsay, and which is, at the best, but secondary evidence, and such as is never received when more direct evidence can be had. We by no means make this remark in disparagement of Mr. Holman's qualifications; on the contrary, we consider them of an extraordinary kind; and when we reflect on the disadvantages and difficulties to which his loss of sight must have subjected him, in the prosecution of his inquiries, we appreciate the more the perseverance and assiduity necessary to compensate for so material a deprivation, and admire the talent and acuteness of observation which that gentleman is known to possess. But it is certainly a curious, and, we should say, a mistaken pursuit, for a blind man to turn traveller. A man, born without fingers, may learn to play the fiddle with his toes; but while we admire the talent which he may exhibit, and the comparative degree of proficiency which he may have acquired, we should at the same time wonder very much at the want of judgment which allowed him to turn fiddler, for which nature had so ill suited him. The application of this familiar illustration to the case of Mr. Holman is too apparent to render it necessary we should point it out.—*Portsmouth Her.*

The Hastings, 74, at Chatham, and Russell, 74, at Sheerness, are ordered to be got ready for commissioning.—*Hants Tel.*

ADMIRALTY ORDERS.

ADMIRALTY ORDERS, &c.

(*Circular, No.* 83.)

Admiralty, 23d October, 1832.

"The Lords Commissioners of the Admiralty having caused a revision to be made of the prices at which Slop Clothing is issued to the Crews of His Majesty's ships, and having in consequence determined that an alteration shall take place in the prices at which such Clothing shall be issued in future, you are immediately, on the receipt of this Order, which is to be noted in the Log Book, to cause a Survey to be held before any further issues are made, upon the articles of Slop Clothing remaining in charge of the Purser, for the purpose of showing the quantity and value thereof, the Purser taking care to credit or charge himself in his Slop Account with the difference in value between the old and new prices; and Slops are thenceforward to be issued at the prices fixed in the scale on the other side hereof.

"A Copy of the Report of Survey of remaining Slops is to be sent to the Comptroller of the Victualling.

"By Command of their Lordships,
"GEORGE ELLIOT.

"To all Captains, Commanders, Commanding Officers and Pursers of His Majesty's Ships and Vessels."

LIST OF SLOP CLOTHING,

And of the Prices at which the Articles are respectively to be issued.

		s.	*d.*
Blue Cloth	Jackets, No. 1. A and B	25	0 each.
	Jackets, No. 2.	10	0 each.
	Trowsers, No. 1. A and B	15	6 per p.
	Trowsers, No. 2.	6	0 per p.
Duck	Trowsers	2	6 per p.
	In the piece	0	10 per y.
	Frocks	2	6 each.
Flannel	Waistcoats	2	6 each.
	Drawers	2	0 per p.
Worsted	White knitted Jackets	5	9 each.
	Blue knitted Jackets	6	0 each.
	Knitted Drawers	4	6 per p.
	Stockings	2	3 per p.
	Mits	0	8 per p.
	Caps	1	9 each.
	Blankets	2	6 each.
	Shirts	2	6 each.
	Black Silk Handkerchiefs	2	6 each.
	Hats	4	0 each.
	Caps for Boats' Crews	2	0 each.
	Shoes	4	6 per p.
Flushing	Jackets	14	6 each.
	Trowsers	7	3 per p.
Marks of Distinction	First Class	3	6 each.
	Second Class	2	3 each.
Boys' Slops	Blue Cloth Jackets	7	6 each.
	Blue Cloth Trowsers	5	3 per p.
	Duck Trowsers	2	3 per p.
	Duck Frocks	2	3 each.
	Flannel Waistcoats	1	10 each.
	Flannel Drawers	1	9 per p.
	Worsted White knitted Jackets	3	6 each.
	Stockings	1	0 per p.
	Shirts	2	0 each.
	Hats	3	0 each.
	Soes	3	3 per p.
	Hair Beds	11	6 each.

(*Circular, No.* 84.)

"By the Commissioners for Executing the Office of Lord High Admiral of the Kingdom of Great Britain and Ireland, &c.

"Whereas we think fit that Chocolate, which we have directed to be prepared, shall be used in His Majesty's Ships and Vessels under your command, in lieu of Cocoa, we do hereby desire and direct, with reference to the Scheme of Victualling established by His Majesty's Regulations for His Service at Sea, that the said Chocolate shall be issued to the several Ships' Companies under your command in the same quantities as Cocoa is at present issued,

"Given under our hands the 29th Oct. 1832,

"T. M. HARDY,
"S. J. BROOKE PECHELL.

"By Command of their Lordships,
'GEORGE ELLIOT.

"To all Captains, Commanders, Commanding Officers and Pursers of His Najesty's Ships and Vessels."

(*Circular*, No. 85.) " *Admiralty*, 18*th November*, 1832.

" It is the direction of my Lords Commissioners of the Admiralty, that whenever any of His Majesty's Ships shall have on board any implement or arrangement in the armament of a ship differing from the establishment, the Captain or Commanding Officer shall transmit to me, in addition to the quarterly Report for their Lordships, a half-yearly Report, according to the annexed form, of the merits of the several inventions: the first Report to be transmitted as soon as possible.

" These Reports are to be marked on the left-hand corner of the cover ' for the Ordnance.'

" By Command of their Lordships,
" GEORGE ELLIOT.

" To all Flag Officers, Captains, and Commanding Officers, of His Majesty's ships and vessels."

A REPORT of the TRIALS and EXPERIMENTS made on the various IMPLEMENTS and ARRANGEMENTS of the Armament of HIS MAJESTY'S Ship, ———————— Commanded by ————————

No.	A.	B.	C.	D.	E.	F.	G.	H.
	How long they have been in use on board.	Where received.	Names of the Articles.	Names of the Proposers. or Inventors.	Points in which they differ from articles of the same kind in use before.	Advantages proposed by the Alteration.	Opinions respecting their comparative advantages or disadvantages.	Whether they should be retained in their present state, improved or modified, or wholly rejected as permanent equipments.

NOTE.—If any information be required with reference to the Columns E and F, it will be furnished to the respective Captains, &c. on application to the Board of Ordnance.

The "Chest at Chatham," is reopened, and the deduction of six-pence per month from the wages of seamen in the various branches of His Majesty's service, a practice recently discontinued, has been revived.—*Ports. Her.*

From the superior sailing qualities of the Fair Rosamond, (lately a companion of the famed Black Joke, on the coast of Africa,) it is at length decided to repair her.—*Ports. Her.*

The vessel employed at the Bell Rock as a floating light, in 1807—11, when removed, was found to have her bottom covered with muscles three inches and a half in length, and upwards of one inch in breadth, though she had been afloat only three years and seven months. Previous to being moored she was completely caulked and pitched.—*Ports. Herald.*

MOVEMENTS OF TRANSPORTS.

Amphitrite—Lieut. Cooley, Portsmouth.
Arab—6th Oct. arrived at Cape of Good Hope, on way to Ceylon.
Diligence—Portsmouth.
Hope—Lieut. Ryder, Plymouth.
Maitland—Lieut. Saunders, Deptford.
Marshal Bennet—Woolwich.
Numa—Lieut. W. J. Woodman, Deptford.
Orestes—Lieut. Garrett, Deptford.
Prince Regent—Portsmouth.

Births.

On board H.M.S. Prince, lately, the lady of Captain James Lillicrap, commanding H.M. ships and vessels in Ordinary, of her twelfth child.

At Lugton, Dalkeith, on the 5th Dec. the wife of Captain Robert Tait, of H.M.S. Spartiate, of a son.

At Ryde, on the 4th Dec. the lady of Capt. C. Lock, R.N., of a son.

Marriages.

Lately, at Portsmouth, Mr. Joseph Beech, Boatswain of his Majesty's Customs Quay at this port, to Miss Ann Brady, of Havant.

Lately, at Titchfield, John Greenish, Esq. Surgeon, of the Royal George yacht, to Miss Anna Morris, daughter of —— Morris, Esq. of Stubbington, in this county.

Deaths.

On 2d Dec., at Nettlecombe Parsonage, aged 47, the Rev. Philip Panter, M.A.; for sixteen years a most active and pious Chaplain in the Royal Navy.

Captain G. F. Lyon, the celebrated traveller, died in October last, on board H.M. packet Emulous, on his way to England.

On the 12th October last, at Napoli, aged 31, Mr. Alexander M'Arthur, Assist.-Surgeon of his Majesty's ship St. Vincent, only son of Mrs. M'Arthur of King-street, Gosport.

At Cardigan, South Wales, in the 41st year of his age, Lieutenant Charles Davis, R.N.

Lately, at his residence, Torpoint, Lieut. James Nash, R.N., son of the late Captain James Nash, aged 34.

At Fratton, on the 4th Dec., Lieut. Abraham Hughes, R.N. (1802.)

Lately, on board H.M.S. Hyacinth, when in the Gulph of Mexico, Mr. W. J. Atrill, Purser of that ship.

On the 27th Nov., at Greenwich, in the 60th year of his age, Matthew Salmon Kent, Esq., late Surgeon of his Majesty's Dock-yard at Deptford.

Lately, at Dover, aged 70, Captain John Hatley, R.N., the last survivor of the companions of our illustrious circumnavigator, Captain Cooke.

A few days since, at Kingstown, Dublin, Commander Terence O'Neil, R.N. (1800.)

At Deal, Lieut. Wm. Syfret, aged 48.

Lately, aged 29, in Marlborough-row, Portsea, Mr. George Courtney. This promising young man was educated at the School of Naval Architecture, but was removed out of his immediate profession, and appointed superintendent of steam machinery by the present Naval Administration. His death was occasioned by a violent cold caught in the execution of his duty. To a mind of more than ordinary intelligence, was combined a disposition of benevolence which gained him the esteem of all who had the pleasure of his acquaintance. In him his afflicted family have lost an endeared relative, his associates a sincere friend, and the public a valuable servant.

Vice-Admiral Sir Edward Griffith Colpoys, K.C.B., Commander-in-Chief on the North American station, died at Bermuda on the 9th Nov. of general debility and a broken constitution. He selected a particular spot in one of the islands, called Ireland Isle, in which he wished his remains to be interred. His son, Commander Henry G. Colpoys, late of the Sparrowhawk, was on shore with him when he died. He was a native of Ireland, and in the 66th year of his age.

Vice-Admiral Sir Henry Blackwood, K.C.B.—This highly distinguished officer died of scarlet fever, on the 21st of December, at Ballyhedy House, the seat of his brother, Lord Dufferin and Clanboyne, in the county of Down. He was in his 62d year, and was the fifth son of Sir John Blackwood, Bart.

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THE

NAUTICAL MAGAZINE,

&c.

FEBRUARY, 1833.

HYDROGRAPHY.

Note.—All Bearings are Magnetic, unless otherwise stated.

11. SHOAL IN THE BRITISH CHANNEL, *South-East of the Isle of Wight. Least water yet found, 7 fathoms.*

THAT a shoal of seven fathoms should be recently discovered in a part of the British Channel so much frequented as that, only a few miles from the Isle of Wight, is a satisfactory proof, were it required, of the justness of our motto, that "there are no charts of any part of the world so perfect, nor any directions so complete, as not to afford frequent occasion for revision and amendment." The following are the particulars of it, that have been communicated by Captain E. J. Atkinson, R.N., by whom it was discovered.

In the early part of November last, Captain Atkinson had taken a pleasure-boat out of Cowes for a cruise, and, being nearly becalmed, put his fishing-lines out. He was surprised on finding the water shoaler than he expected, being then well out from the land, where the general depth is about 30 fathoms. On gathering in his line, he found that he was on a bank of seven fathoms, but was soon drifted from it by the tide, and found that the water deepened rapidly.

The marks and bearings from the bank were, "the Needles Light-house just open of St. Catherine's Point, the latter distant 25 miles; and the Ower's Light-vessel, N.E. ¼ N., about 20 miles." It therefore, lies very nearly on the meridian of Selsea Bill, distant from it 23 miles.

A shoal was reported in this situation a short time ago, which we believe to have been no other than the present, and it was searched for without success. As it is very possible that there may be less water on it than seven fathoms, we caution vessels to avoid making free with it.

12. CANARY ISLANDS. *Sunken Rock, in the Channel, between the Islands of Teneriffe and Canary. Least water, 12 feet.*

The pilots of Teneriffe assert, that a rock with only 12 feet water on it lies W.N.W., distant 2½ leagues from Point Aldea of the Grand Canary Island, but can give no marks for it. They also state, that the sea breaks on it in bad weather.

As no such rock appears on the charts, we shall be thankful to any of our readers for information respecting it.

13. DANGEROUS ROCK, *in the Gulf of Napoli di Romania. Least water on it, 12 feet.*

We extract the following from the remarks of Captain the Hon. R. S. Dundas, of H.M.S. Belvidera in the Mediterranean.

"Several sunken rocks are now known to exist in different places, which are not noticed in any of the charts. One of these, with only 12 feet water on it and 25 fathoms close to it, was discovered a few days before our arrival at Napoli, by the boats of H.M.S. Madagascar, then lying in the little harbour of Drepano. The situation of it is between the three islands called Tolon, Platea, and Hypsile or Devil's Island; and it lies in a S.E. direction from Tolon Island. It does not appear to be much in the way of ships sailing up the gulf of Napoli; but, with a beating wind, a ship standing close in near these islands might strike upon it.

"In this case, it should be remembered, that the bluff land lying N.W. of Tolon island, kept open of the S.W. point of that island, will lead clear outside of it. And that—

"The low point of the main land inside, and opposite Spezzia, kept open *one* degree to the S.W. of the western angle of Devil's Island, will lead directly upon it. Therefore, the same low point kept well open to the S.W. of the Devil's Island, will lead clear of it.

"These marks would be sufficient to guide a stranger in sailing up the gulf to Napoli, but not in entering between the islands. This is the only known danger any where in the gulf."

14. SHOAL IN THE CATTEGAT, *South-East of Lessoe. Least water yet found, 18 feet.*

On April 25th, 1832, an English brig, the Sultan, Captain R. W. Peacock, touched in 14 feet of water in the Cattegat, between Lessoe and Anholt. As the vessel's place, by the dead-reckoning, reduced from the bearings of the evening before, as well as from those of the next noon, was not near any shoal by the chart, a surveying-vessel was immediately sent by that active and zealous hydrographer, Captain Zahrtmann, to determine the true position of the bank. After a ten days' search, the least depth found on it was 18 feet Danish, (about 18½ English,) and it proved to be a small bank in lat. 57° 4′ N. and long. 11° 26′ W. of Greenwich. It is still very probable that less water may be found thereabout, as in the old chart of the Cattegat, by Professor

Lous, and very nearly in the same position, such a knowl is laid down, said to have upon its shoalest part a depth of only 10 feet water.

15. HARBOUR OF FREDERICKSHAVEN. *Communicated by Captain Zahrtmann, Royal Danish Navy.*

The piers forming this capacious harbour are now finished. The harbour affords shelter to ships drawing 13 or 14 feet water, and is furnished with every thing which a ship may require. On the southern pier-head, in lat. 57° 26′ N. and long. 10° 33′ E. of Greenwich, a Light-house has been erected, which exhibits a stationary harbour-light all night, 23 feet above the level of the water.

Ships may run close to the S.E. point of the island of Heirsholmen, where pilots are established, who come out on a given signal, and will conduct ships either to the coast and harbour of Frederickshaven, or through the channel of Lessoe, between that island and Jutland. This track is pursued by ships bound through the Belts into the Baltic, and it may, under many circumstances, prove the most favourable track also for ships bound to the Sound, as the S.W. winds are the most prevailing, and as the whole western side of the Cattegat is a sandy flat, with only from five to nine fathoms water, affording good anchorage in every part.

16. POSITION OF CAPE FAREWELL, *Coast of Greenland. Communicated by Captain Zahrtmann, Royal Danish Navy.*

During his last stay in South Greenland, Captain Graah had an opportunity of determining the longitudes of the two southernmost Danish establishments, Julianeshaale and Nennortalic, with great precision, by means of occultations of fixed stars, compared with observations made at the Observatory at Altona. As those observations gave the difference in longitude only 2″ different from the geodetical survey, the result of this can, in that part of the coast, be confidently relied on, and, according to it, the position of Cape Farewell is

Lat. 59° 49′ 12″ N.
Long. 43 53 40 W. of Greenwich.

Cape Christian, another promontory situated on the same island, was visited by Captain Graah himself, and its position found to be

Lat. 59° 49′ 30″ N.
Long. 44 5 0 W.

When due care is taken not to confound those two Capes on the same remarkable headland, their position is now so well determined, that they may serve navigators with the means of correcting the rates of their chronometers.

17. THE DORO PASSAGE, *Mediterranean.*

The following is an extract from the remarks of Captain the Hon. R. S. Dundas, of H.M.S. Belvidera, in the Mediterranean :

"In the Book of Directions, published by Purdy, and furnished by the Admiralty for the use of King's ships, it is stated, that two rocks called the 'Old Men' exist in this passage, on which ships are annually wrecked. This is certainly a mistake, as the channel is well known to be clear and bold."

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18. STRATONISI ISLANDS. *Mediterranean. Sunken Rock near them.*

There is a cluster of small rocky islands called Stratonisi, between Spezzia and Hydra, that are not very correctly laid down in the charts ; for the largest of these, which is the easternmost, is entirely omitted.

A mile and a half to the eastward of this large island, there is a sunken rock, which must be carefully avoided. Having passed this, a vessel will meet with no other danger on the coast of Hydra, which is rocky, high, and bold.

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19. CURRENTS IN THE WEST INDIES.

A BOTTLE paper, of which the following is a copy, has been sent home by Colonel Cockburn, Governor of Belize.

H.M.S. Chanticleer, 23d February, 1831. In lat. 15° 28′ 59″ N. long. 76° 2′ 45″ W. At noon this paper was thrown overboard, with a view of ascertaining the current at this season of the year, between the coast of Columbia and the island of Jamaica, the ship having left Porto Bello ten days, leaving the bay of Santa Martha on Monday, 21st February, at 6 P. M."

We find, by the following, which appears on the back of the paper, that it was picked up afterwards on the 20th of April, at about forty leagues from the bay of Ascension, on the coast of Yucatan.

"Documento fue hayado el 15 de Abril de este ano en la costa oriental de Yucatan, a distancia 40 leguas de la Bahia de Acencion y Abril 20, de 1831.

"JOSE GREGORIO PACHEIO."

The absolute course and distance between the above situations, is about N. 70 W. (true,) six hundred miles ; and the elapsed time between the two dates allows it to have been set about ten miles and a half per day, by a superficial current in that direction. It must, however, have been influenced in its course by various circumstances, and, allowing it to have drifted a hundred miles further, by taking the contour of the coast into consideration, it might have travelled about twelve miles a day, or half a mile per hour, to the westward.

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20. ANCHORAGE OFF LAMBAYEQUE, *Coast of Peru. From the Observations of Mr. Babb, late Master of H.M.S. Alert.*

A vessel bound to this place from the southward should make the hill of Eten, the highest land about here near the coast, and distant from the town about six leagues. The coast off the town, and to the N.W. of it, is very low, and should be approached with caution, allowance being made for the current, which sets to the N.W. sometimes a mile and a half per hour. Vessels, by not attending to this particular, have been drifted to leeward of the place, and have lost three or four days in beating up again. Having made the hill of Eten, a vessel may stand-in for the anchorage in lat. 6° 50′ S. and long. 79° 50′ W., or 2° 48′ W. of Callao. Care must be taken to keep the lead going.

The Alert's anchorage was about four miles off the shore, in seven fathoms, with the hill of Eten S.E. ½ E.

Landing can only be effected here safely in the balsas of the country, and no boat can cross the bar.

The Lobos de tierra lie W.N.W. (true) from this anchorage distant 15 leagues. They are small low islands, and may be seen eight or ten miles off. They are surrounded by detached rocks, and no ships should attempt the passage between them and the coast.

21. BANK TO THE SOUTHWARD OF SCILLY. *British Channel. Least water, 20 fathoms.*

His Majesty's ship Caledonia, bearing the flag of Vice-Admiral Sir E. Codrington, G.C.B., commanded by Captain Curzon, struck soundings on a bank of 20 and 25 fathoms, in August, 1831. The latitude observed was 49° 45′ 22″ N. St. Agnes light bore N. by E. ¾ E. Eastern extreme of St. Mary's Isle N.E. by N. The Caledonia was hove to on the bank for about ten or fifteen minutes, to pick up the boat of a vessel that had joined the squadron; and, in consequence of hazy weather coming on, no other bearings were obtained. The master of the Caledonia reports, that it is laid down on a chart published by Heather, and revised by Norie, in 1815, but rather too far to the southward.

22. ANCHORAGE AT ELSINORE.—*From the Annales.*

Captain Thomson, of the *Moen*, (the brig that has the guard,) in the road of Elsinore, has given notice, that since the month of July that vessel has been moored with chain cables instead of hempen ones as previously, which are laid in the general direction of the current S.W. by S. and N.E. by N., the anchors being 40 fathoms distant from each other. The brig rides by a chain fastened to the middle of the large chain, the two anchors of which are provided with strong buoys.

Vessels should be cautious in anchoring or getting under way, to keep their anchors clear of this chain.

FEBRUARY, 1833.

TIMES OF HIGH WATER.

Week Day.	Month Day.	Plymouth Dock Yard. Morn h.	m.	Aft. h.	m.	Portsmouth Dock Yard. Morn h.	m.	Aft. h.	m.	Sheerness Dock Yard Morn h.	m.	Aft. h.	m.	London Bridge. Morn h.	m.	Aft. h.	m.	Aberdeen. Morn h.	m.	Aft. h.	m.	Leith. Morn h.	m.	Aft. h.	m.	Month Day.	☽'s Age at Noon.
F.	1	1	46	2	28	8	12	8	51	9	34	10	14	10	22	11	0	10	15	10	47	11	50	....		1	11·6
Sat.	2	3	7	3	42	9	24	9	56	10	48	11	18	11	38	....		11	17	11	46	0	22	0	52	2	12·6
S.	3	4	12	4	41	10	24	10	51	11	45	....		..	12	..	46	....		0	13	1	21	1	48	3	13·6
M.	4	5	6	5	32	11	15	11	39	..	12	..	38	1	15	1	45	0	39	1	4	2	14	2	39	4	Ful
Tu.	5	5	58	6	22	..	4	..	4	1	4	1	26	2	17	2	43	1	27	1	50	3	2	3	25	5	15·6
W.	6	6	42	7	2	..	28	..	50	1	46	2	7	3	6	3	31	2	13	2	35	3	48	4	10	6	16·6
Th.	7	7	22	7	40	1	12	1	32	2	27	2	45	3	57	4	21	2	55	3	16	4	30	4	51	7	17·6
F.	8	7	58	8	17	1	52	2	12	3	5	3	26	4	45	5	10	3	35	3	55	5	10	5	30	8	18·6
Sat.	9	8	35	8	54	2	33	2	54	3	47	4	7	5	33	5	53	4	16	4	36	5	51	6	11	9	19·6
S.	10	9	14	9	35	3	18	3	39	4	27	4	49	6	10	6	28	4	57	5	21	6	32	6	56	10	20·6
M.	11	9	58	10	23	4	3	4	30	5	11	5	35	6	48	7	4	5	46	6	15	7	21	7	50	11	L Q
Tu.	12	10	53	11	29	4	58	5	30	6	4	6	37	7	26	7	49	6	49	7	27	8	24	9	2	12	21·6
W.	13	....		..	8	6	8	6	46	7	11	7	50	8	18	8	51	8	9	8	51	9	44	10	26	13	22·6
Th.	14	..	53	1	30	7	22	7	56	8	29	9	9	9	23	10	10	9	30	10	5	11	5	11	40	14	23·6
F.	15	2	4	2	37	8	29	8	59	9	44	10	15	10	52	11	27	10	37	11	4	....		0	12	15	24·6
Sat.	16	3	8	3	37	9	25	9	51	10	43	11	7	....		..	3	11	28	11	50	0	39	1	3	16	25·6
S.	17	4	1	4	23	10	13	10	34	11	28	11	48	..	34	..	58	....		0	10	1	25	1	45	17	26·6
M.	18	4	44	5	2	10	53	11	11	....		..	8	1	22	1	45	0	29	0	46	2	4	2	21	18	27·6
Tu.	19	5	21	5	40	11	29	11	47	..	28	..	47	2	6	2	28	1	2	1	17	2	37	2	52	19	N M
W.	20	5	59	6	16	....		..	5	1	5	1	21	2	46	3	4	1	33	1	48	3	8	3	23	20	0·8
Th.	21	6	33	6	47	..	22	..	39	1	37	1	52	3	21	3	36	2	3	2	17	3	38	3	52	21	1·8
F.	22	7	2	7	17	..	56	1	12	2	7	2	22	3	52	4	9	2	31	2	46	4	6	4	21	22	2·8
Sat.	23	7	32	7	47	1	27	1	43	2	37	2	53	4	26	4	42	3	1	3	17	4	36	4	52	23	3·8
S.	24	8	2	8	18	2	0	2	17	3	10	3	28	4	57	5	12	3	34	3	51	5	9	5	25	24	4·8
M.	25	8	34	8	52	2	35	2	54	3	46	4	5	5	28	5	43	4	10	4	31	5	45	6	6	25	5·8
Tu.	26	9	11	9	34	3	15	3	37	4	25	5	47	5	58	6	14	4	53	5	18	6	28	6	53	26	6·8
W.	27	9	58	10	27	4	1	4	30	5	11	5	38	6	31	6	49	5	48	6	22	7	23	7	57	27	F Q
Th.	28	11	2	11	44	5	2	5	41	6	14	6	50	7	15	7	40	7	2	7	45	8	37	9	20	28	8·8

These Tables are calculated for *Mean Time*. The three first columns have been computed from the results of twelve months' observations made in His Majesty's Dock-Yards at Plymouth, Portsmouth, and Sheerness; and at the Ports of Aberdeen and Leith; but the corrections for the declinations of the Sun and Moon, and for the Moon's parallax, have not been applied to them, because these observations are not yet sufficiently numerous to undergo the analysis necessary for obtaining the value of those corrections.

The times for London Bridge, contained in the fourth column, have been calculated from the result of nineteen years' observations made at the London Docks, ten minutes having been allowed for the difference of the times of high-water between the London Docks and the Bridge. In this calculation, the corrections for the Sun and Moon's declinations, and for the parallax of the Moon, have been included: but these observations are now undergoing a more extended investigation. The Moon's age is given in days, and the nearest tenths of days from the time of change.

The times of high-water, nearly, at other places on the coast, may be found with the assistance of the above table within certain limits. Thus, the times in the Plymouth-Dock column are to be used for all places between the Land's End and Lyme Cob; and those in the Portsmouth column, for all places between Portland Bill and Beachy Head; by adding or subtracting the time opposite each place, according to the sign + or —.

The times of high-water at Plymouth Dock-Yard are to be used with the difference against the following places, to find the time of high-water there on the same day:—

	h. m.		h. m.
Mounts Bay and Lizard	— 1 3	Eddystone	— 0 18
Falmouth Harbour	— 0 18	Dartmouth and Torbay	+ 0 27
Fowey Harbour	— 0 18	Exmouth	+ 0 52
Cawsand Bay	— 0 10	Lyme Cob	+ 0 27

The times of high-water at Portsmouth Dock-Yard are to be used as above, for the following places:—

	h. m.		h. m.
Portland Bill	— 6 10	Cowes	— 0 55
Weymouth Harbour	— 5 10	Southampton	— 1 0
Christchurch and Poole Harbours	— 2 50	Bembridge Point	— 0 40
Needles Point	— 1 55	Selsea and Arundel Harbours	+ 0 5
Hurst Chamber	— 1 40	Shoreham Harbour	— 0 25
Lymington	— 1 25	Beachy Head	— 1 25

The above table, excepting the columns for Aberdeen and Leith, have been calculated by Mr. J. F. Dessiou, R.N., and is part of a series preparing for publication at the Admiralty. The times for Aberdeen and Leith have been calculated by Mr. George Innes of the former place.

VOYAGES AND MARITIME PAPERS.

I.—*On the* WATER BAROMETER *at Somerset House. From Papers read before the Royal Society.*

MR. I. F. Daniell, the professor of chemistry of King's College, London, had for some time been desirous of constructing a water barometer, and having submitted his plan for this purpose to the late Meteorological Committee of the Royal Society, received directions to carry it into execution, and to fix the barometer in the hall of the Royal Society's apartments at Somerset House.

In the course of his researches on this subject, the only allusion that he could find to such a machine having been previously made, was in a volume of the History of the French Academy of Sciences,* wherein it is slightly mentioned, that M. Mariotte had made observations with one, for the purpose of comparing it with the mercurial barometer. Mr. Daniell also relates that Otto Guericke constructed a philosophical toy, for the amusement of himself and his friends, on the principle of the water barometer. He says, that it consisted of a tube, above thirty feet in length, rising along a wall, and terminating by a tall and rather wider tube, hermetically sealed, containing a toy in the shape of a man. The whole being filled with water, and set in a bason on the ground, the column of liquid settled to the proper altitude, and left the toy floating on its surface; but all the lower part of the tube being concealed by the wainscoting, the little image made its appearance only in fine weather. To this whimsical contrivance he gave the name of "*Anemoscope* or *Semper vivum.*" The ingenuity of Otto might serve our opticians with a hint to construct something similar, which we have no doubt would be appreciated.

Neither of these machines could furnish the means of making such observations on the different states of the atmosphere as are expected in the present state of science. Mr. Daniell clearly saw, in order to obtain a series of perfect observations, that it was absolutely necessary to have a tube of a single piece of glass, and that the water should be thoroughly deprived of air by the process of boiling, as is done with the mercury of the common barometer; and, also, that the re-absorption of the air into the water should be effectually guarded against. We may here observe, that the delicate processes by which these conditions are to be obtained, were not likely to be so effectual in the earlier periods of meteorological science, compared with the various improvements of the present time; and that unless such particulars be most strictly attended to, the observations become vitiated from various causes, and, therefore, worse than useless. Mr. Daniell, having devised his plan for obtaining the glass, which he considered the most difficult point to be overcome, he set to work accordingly, and gives us the following brief sketch of his operations for this purpose.

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* Histoire de l' Academie, tom. i. p. 234.

"The first object was to procure a glass tube of the proper diameter, and of sufficient length for the purpose. Messrs. Pellatt and Company, of the Falcon Glass House, very obligingly consented, upon application, to permit the trial to be made at their works; such an undertaking never having been before attempted. Accordingly, a very strong packing-case was prepared, of one-inch-and-a-half deal, forty feet long, five inches wide, and four inches deep, inside measure; with a cover, of the same thickness, to screw down upon it. This was carried to the glass-house, and being laid in the yard with its cover off, small pieces of wood were placed across its bottom, at about one foot intervals. The only instructions given to the workmen were, to make a tube of the length of the box, that should not be less than half an inch internal diameter, and as equal throughout its length as possible; and the manual dexterity with which he proceeded to effect this, was well worthy of admiration. Having collected the glass at the end of his tube, and blown the cavity, a boy attached another iron, with a small lump of hot glass, to the opposite extremity of the mass, and drew the tube out by walking away to the required distance. The curve of the hot glass was so great, that the workmen could scarcely prevent it from touching the pavement, (which of course would have caused its instant destruction,) by holding its extremities above their heads. While it was still red-hot and pliant, it was carefully laid upon the transverse pieces in the box, and rolled backwards, till cool, by which a perfectly cylindrical form was secured. While the drawing process was going on, others of the workmen fanned with their hats, for the purpose of cooling the parts, which appeared to be extending too fast; and by such simple means a tube was perfected without a flaw, and of the greatest regularity, varying only from one inch diameter at its lower extremity to 0.8 inch at its upper one." Another tube was made of the same description, for use, in case of an accident happening to the first.

A small thermometer, with a platinum scale, being introduced into the tube, for the purpose of indicating always the temperature of the water in it—and three feet being cut off it, as it was longer than required—it was then fixed in the well-staircase leading to the rooms of the Royal Society. A small copper steam-boiler, with a temporary flue, was also fixed beneath it, for the purpose of boiling the water, which is now the cistern of the barometer.

Mr. Daniell relates at length the very delicate process of filling the tube with distilled water by means of this boiler, and the operation of adjusting its scale by a mercurial barometer as a standard; all of which, we regret, is too extensive for our limits. These measures being completed, the water in the cistern was covered with oil to the depth of half an inch, to prevent a communication between the atmosphere and the water of the barometer; and the whole machine was ready to commence a series of observations in the summer of 1830. By a very careful measurement, Mr. Daniell found that the column of water stood exactly thirty-three feet four inches, or four hundred inches above the level of the fluid in the cistern, and this height Mr. Daniell considers the neutral point of the instrument; above or below which, he gives a small correction, to be applied to the observations, in order to reduce them to a corresponding state of the mercurial barometer.

A series of observations was then made from October, 1830, to March, 1832, which afforded some very remarkable results. In windy weather the column of water was found to be perpetually in motion, resembling the slow action of respiration in an animal; and many fluctuations are observed in the water barometer, arising from the pressure of the atmosphere, which cannot be detected in the mercurial barometer. During a heavy gale of wind on the 16th of November, 1830, Mr. Daniell observed the oscillations amounting to nearly six-tenths of an inch, during an interval of an hour and a half, while the mercurial barometer remained stationary.

Mr. Hudson, the Assistant Secretary, and Librarian of the Royal Society, has also been much engaged in carrying on hourly observations with this instrument; from which he has ascertained, that the rise and fall of the water barometer, precedes, by one hour, the similar motions of that of mercury, with a bore of half an inch, as well as the mountain barometer of 0·15 inch bore; on which Mr. Daniell observes, that while philosophers are disputing about the hours of maxima and minima, much depends on the construction of the instruments observed; and proving the necessity (which was long since pointed out by Mr. Daniell) of making these delicate observations with instruments which have been compared with accurate and known standards. Mr. Hudson has illustrated his observations with a set of diagrams, in which the oscillations of the different barometers are at once seen. The same gentleman is still pursuing this delicate subject, and proposes, among his investigations, to ascertain whether the size of the diameter of the tube exercises any influence over the column of mercury. To effect this, a compound barometer, constructed by Mr. Dollond, is used, and has already afforded, Mr. Hudson tells us, some new and interesting results. The instrument consists of six tubes, of different internal diameters, varying from 0·13 to 0·50 of an inch, all of which stand in the same cistern, and are read off by an index common to all. The result of these experiments will, no doubt, be highly interesting, and afford the means of ascertaining the most proper diameter of the tube. Another point of investigation which Mr. Hudson proposes, is to make observations with a view to ascertain the relation between the mean daily variation of the magnetic needle, and that of the barometer: and whether the former would be found to exhibit the same dependence on the changes of temperature as his recent observations have shewn the latter to have. This is, no doubt, a most arduous undertaking, and will require a large stock of that minute attention and perseverance, which will be only repaid by the valuable and interesting results to be derived from it. In addition to the foregoing, Mr. Hudson also proposes to ascertain the connexion between the mean barometric height and the variations referred to it, and the influence of altitude in the station of observation upon those variations.

We cannot but look on all these observations as highly interesting, as reflecting great credit on Mr. Hudson, and as likely to be attended with results which will prove very beneficial to this branch of knowledge.

II.—New Islands in the Pacific Ocean.

Translated from the Annales Maritimes.

[Extract from a Private Letter.]

Lima, 13*th May*, 1832.

The Comboy, an American merchant vessel, arrived, on the 29th of last month, at Callao, from Waohoo, one of the Sandwich Islands.

Mr. Harding T. Merrill, the captain of this vessel, states that, on his passage, he discovered three islands, in the following positions: viz.—

Lat. 15° 50′ S.	long. 141° 0′ W.	from Greenwich.
Lat. 16° 24′ S.	long. 142° 24′ W.	ditto.
Lat. 16° 38′ S.	long. 141° 0′ W.	ditto.

Two of these islands are inhabited; the natives have the stature and nut-brown complexion of the Sandwich Islanders, but they did not appear to have such mild dispositions.

The Comboy has brought to Callao a native of the island of Waohoo. This individual is a young man, 24 years of age, well made, and whose real name is Kioukiou. Notwithstanding his complexion, he has an intelligent countenance; he speaks and writes perfectly his native language, (the Kancke,) and he can keep up a conversation in English. He is accompanied by an English interpreter, who presents him under the name of John Aroja Kivini, and describes his quality as being that of grand chamberlain of His Majesty, Taméhaméha, third king of the Sandwich Islands. It has been said that the object of this interesting traveller, was to offer the Peruvian government tractable and laborious colonists from his own country, who might people part of the deserts which separate the inhabitants of the coast of Peru from the mountaineers, and might establish, on a given space, a bond of communication between them. This story is fabulous. The sole object of his voyage is to visit a part of Peru, especially Lima, the first city in the world, in the eyes of the South Sea Islanders.

Taméhaméha the Third is 19 years of age; he is not married, and the queen-mother governs. To all appearance, this prince will not have the warlike disposition of his ancestor.

Nevertheless, an entire change has taken place in Waohoo and Owhyhée, the principal of the Sandwich Islands. Calvinist missionaries, who have settled there, have softened the manners, and changed the religion of the country. These missionaries, who possess a great influence in the islands, lately procured the dismission of two French Catholic priests, who had gone there to preach the faith.

Taméhaméhe the Third has a small army, and a little navy. When Kivini and his interpreter quitted the island of Waohoo, there were, in the port of that name, sixty vessels. That port is principally frequented by American and English whalers, who repair there to re-victual, and give in exchange arms, and some articles of merchandise. The Americans take, besides, in this port, the produce of the country, which they transport to the north-west coast of America, where they obtain, in exchange, furs, which they carry to China. This commerce, which is still in its infancy, will gradually extend, and cannot fail to become, in a little time, very important.

The Sandwich Islanders are not insensible to the fine arts: Kivini, when he went for the first time to the Italian Opera, in this town, confessed that he preferred the singing to that of the missionaries in his own country!!

During a visit which I received from this islander, I had him served with the most esteemed European wines. He seemed to prefer Bourdeaux wine to all the others. Having asked him, if he had ever heard of Napoleon Bonaparte, he answered, "that he was a good soldier." Then he asked me, in return, "how many enemies Napoleon Bonaparte had killed with his own hands?"

At Waohoo and Owhyhée, a man's courage is estimated according to the number of men that he has killed: and he who has taken the lives of twenty men, is regarded as the greatest of heroes.

[These islands appear to be the same as those mentioned in page 378 of our first volume. The longitude has been inadvertently stated as East, in the *Annales*, and there is a difference of latitude in the position of the first, amounting to forty miles. We have, however, preserved that given in the *Annales*.—Ed.]

III.—Hints on Chronometers.

The concern which every one interested in nautical affairs must necessarily feel on the subject of chronometers, and their vast importance to nautical men, has induced us to enter rather largely in the present number, considering our confined limits, into some particulars relating to them. Important as the chronometer is to the several wants of the seaman and the astronomer, much yet remains to be discovered towards improving a machine which may be considered the noblest and most useful specimen of human ingenuity.

Chronometrical science is not an independent one: it is intimately connected with a knowledge of chemistry; for, unfortunately, the principal source of error in the chronometer, arises from chemical agency; therefore, the properties of different metals, and the relative influences exerted on them by surrounding objects, ought to be well known to the chronometer maker. In proportion to the extent of his information in these particulars, he will certainly produce a good or a bad chronometer. It follows, then, that perfection in chronometer making is not a theoretical point; it is one purely practical, and we shall find, that the cause of error in a chronometer, may be referred to our ignorance respecting the properties of the metals which are employed in the construction of the balance spring.

The annual trial of chronometers, at Greenwich, as it is at present ordained, is by no means calculated to develop any facts conducive to the improvement of the machine itself. On the contrary, it would not be difficult to prove that it operates rather against this most important end. If we refer to the printed monthly reports of the rates of these trial chronometers, that are issued from the Royal Observatory, we shall find that ten years have now elapsed since the annual trial was first established, and that not one solitary attempt has been made, during that time, to introduce novelty in the construction of the chronometer. Now, the professed object of this trial was, not so much to obtain good chronometers, as it was to create a stimulus among the makers towards the improvement of them. The circumstance of several chronometers that have gained prizes at Greenwich, having undergone previous annual trials at that establishment, with the advantage of accumulating age in their favour, corroborates our assertion. There is also another very important fact which bears directly on this point, namely, that chronometers, after undergoing the annual trial with the most scrupulous accuracy, on requiring to be cleaned, are sent to the individual whose name they bear. This person, not having in the first instance made the various adjustments, and being, besides, practically unacquainted with them, when the chronometers have been returned by him, as cleaned, to the Royal Observatory, they have not performed so satisfactorily as before. This, in itself, is a serious evil, and one that is only to be avoided by their being placed in the hands of a person who makes it his chief study to consider the causes which may possibly affect the constitution of the chronometer, whether arising from local magnetism, change of temperature, or others, that operate so powerfully on their delicate mechanism.

This question, involved, as it is, in mystery and difficulty of nearly every description, has been at length taken up by Messrs. Arnold and Dent, who are now directing their united efforts to investigate the theory of chronometers in general. By permission of the Admiralty, they have placed some at the Royal Observatory, that they might avail themselves of the transit observations made at that establishment, in obtaining authenticated rates of them. Their investigations with these experimental chronometers, may as yet be considered only to have commenced, having been hitherto confined to the simple consideration of the effects produced in their performance, by the employment of different metals in the composition of the balance spring. Having arrived at this, their next attempt will be to ascertain the effect produced on these metals by magnetic attraction. The object they have in view, is, to arrive at some certain method whereby the chronometer may be made in the shortest time possible, so as to perform well, and, as a necessary consequence, to cheapen the article. It is a well-established fact, that a chronometer with a hardened and well-tempered spring, has, for some time, a disposition to increase on a gaining rate; and, also, that if the spring be made of hard-rolled wire, that it will assume a losing rate. This fact is well exemplified by the present experiments. The majority of the chronometers employed therein, which were all made expressly for this occasion, differ from each other, both in the balance spring, and, in one instance, in the construction of the balance. This latter is No. 521, originally made by Mr. Arnold, with a very simple compensation balance, for which he has a patent. Being the first made on a new theory, it was sent to the Royal Observatory for observations on its rate, and, considering the peculiarity of the balance, as we may have occasion to refer to them hereafter, we are induced to insert its mean monthly rates from January, 1822, to December, 1826, the time that it was at the Observatory. It was placed in the same room with the chronometers on public trial, and, on comparing its rates with those published, it is evident that it would have obtained the first premium of £300 for the first year of the public trial, had Mr. Arnold then entered into competition with the makers.

No. 521. *Rates from the Royal Observatory.*

	1822.	1823.	1824.	1825.	1826.
January	+1,8	+5,3	+4,9	+3,9	+3,9
February	+2,0	+3,1	+4,0	+3,5	+2,9
March	+3,0	+4,7	+4,4	+4,4	+3,8
April	+3,3	+4,9	+5,2	+4,8	+4,0
May	+2,3	+4,8	+5,4	+4,7	+4,0
June	+1,6	+4,5	+4,7	+4,4	+2,9
July	+2,3	+4,0	+3,5	+3,3	+2,8
August	+2,6	+3,4	+3,3	+3,9	+2,9
September	+3,4	+3,7	+3,0	+3,1	+3,3
October	+3,6	+4,9	+3,5	+3,8	+3,6
November	+4,0	+6,0	+4,2	+3,6	+4,0
December	+5,0	+5,4	+3,0	+3,3	+3,0

This we believe to be the longest daily rate of any chronometer on record, without having once been let down or moved. It is evident, from the above rates, that this chronometer improved yearly, and we have, for 1827 and 1828, a private continuation, which surpasses the above, but, as it is not official, we do not give it.

The foregoing are the rates of an old chronometer on a new principle. The advantage of age may be urged as a reason for its present good performance; but we may observe, that the other experimental chronometers of Mr. Arnold's, have all been made within the last two years. It might be asked, why should it be so desirable to produce a perfect chronometer at once, when a little age will bring it to the same condition? The answer is evident. What becomes of capital in the interim? It is lying dead and unemployed, and, to remunerate the maker, such a condition must necessarily enhance the price of his chronometer. A quick return of capital is desirable in every market, whether in that of chronometers or any species of stores belonging to a ship.

We will now proceed to make a few observations respecting the experimental chronometers, to which we have alluded, and having obtained an attested copy of their rates from the Astronomer Royal, we will lay it before our readers.

"I hereby certify, that the following is a correct copy of the rates of twelve Chronometers, by Messrs. Arnold and Dent, taken at the Royal Observatory, by Order of the Lords Commissioners of the Admiralty.

"J. POND,
"Astronomer Royal."

"Royal Observatory,
"Dec. 18, 1832.

No. 521.

1832.	June	July.	Aug	Sept	Oct.	Nov
1	−5·0	−5·2	−5·1	−5·1	−5·1	−5·4
2	−5 0	−5 3	−5 3	−5 4	−5 6	−5 5
3	−4 8	−5 1	−4 9	−5 4	−5 6	−5 5
4	−4 9	−5 5	−5 3	−5 2	−4 5	−5 7
5	−5 4	−5 4	−4 9	−5 7	−5 2	−5 7
6	−4 7	−4 9	−5 0	−5 7	−5 3	−5 3
7	−4 6	−5 1	−5 4	−4 7	−5 2	−6 0
8	−4 7	−5 0	−5 4	−5 2	−5 5	−5 6
9	−5 0	−4 9	−5 1	−5 3	−5 5	−5 2
10	−4 8	−5 0	−5 9	−5 2	−5 2	−5 2
11	−4 9	−5 4	−5 4	−5 4	−4 8	−5 7
12	−5 0	−5 4	−5 0	−5 5	−5 6	−5 7
13	−4 5	−4 9	−5 1	−5 1	−5 6	−5 4
14	−5 0	−5 3	−5 2	−5 3	−5 7	−6 5
15	−5 2	−5 4	−4 9	−5 4	−5 7	−5 9
16	−4 6	−5 4	−5 3	−5 2	−5 4	
17	−5 1	−4 8	−5 1	−5 2	−5 0	Placed on Public Trial.
18	−5 1	−5 0	−4 9	−5 3	−5 5	
19	−5 1	−5 6	−5 2	−5 3	−5 3	
20	−4 9	−5 3	−5 2	−5 3	−5 6	
21	−5 3	−5 2	−4 1	−5 0	−5 8	
22	−5 0	−5 5	−4 6	−5 1	−5 8	
23	−5 2	−5 4	−5 5	−5 2	−5 0	
24	−5 1	−5 0	−4 9	−5 3	−5 3	
25	−5 0	−4 6	−5 2	−5 4	−6 0	
26	−5 1	−5 4	−4 9	−5 7	−5 6	
27	−5 3	−4 8	−4 9	−5 6	−5 7	
28	−5 1	−5 0	−5 1	−5 7	−4 9	
29	−5 2	−5 5	−4 9	−5 6	−4 9	
30	−5 7	−5 6	−6 0	−5 1	−5 5	
31		−4 9	−5 6		−6 0	
M.D.R.	−5 01	−5 18	−5 13	−5 31	−5 34	
Ex.Var.	1,2	1,1	1,9	1,0	1,5	

No. 605.

832.	June.	July	Aug.	Sept.	Oct.	Nov.
1	+1·2	+1·8	+2·0	+2·0	+0·1	+0·3
2	+1 3	+1 8	+2 0	+1 9	−0 3	−0 9
3	+1 2	+1 1	+1 1	+1 9	−0 7	−0 9
4	+1 1	+1 2	+1 8	+2 0	+0 9	+0 1
5	+1 4	+0 6	+1 6	+2 2	+0 3	0 0
6	+0 6	+1 4	+1 6	+1 7	+0 2	+1 4
7	+1 6	+1 6	+1 1	+1 6	+0 3	+1 1
8	+1 7	+1 4	+1 7	+1 6	+0 4	+1 4
9	+0 5	+1 4	+1 2	+1 7	+0 7	+1 2
10	+1 5	+1 4	+1 7	+1 7	+0 5	+1 5
11	+1 5	+0 8	+1 6	+1 2	−0 3	−0 1
12	+1 0	+0 9	+1 6	+2 3	−0 7	−0 1
13	+0 4	+1 0	+1 6	+2 1	−0 6	−0 4
14	+0 4	+1 3	+1 8	+2 1	−0 4	−0 3
15	+0 5	+1 2	+2 2	+1 9	−0 3	−0 4
16	+0 6	+1 2	+1 8	+1 8	+0 2	0 0
17	+0 9	+1 5	+2 3	+1 8	−0 0	−0 3
18	+0 9	+1 6	+1 9	+0 6	−0 2	0 0
19	+0 4	+1 4	+2 9	+0 5	−0 2	0 0
20	+0 9	+2 1	+2 8	+1 1	+0 4	+0 1
21	+1 0	+2 1	+2 3	+0 9	+0 4	+0 1
22	+0 7	+2 6	+2 4	+0 8	+0 4	+0 4
23	+1 2	+2 6	+2 3	+0 2	+0 1	−1 0
24	+1 4	+2 0	+2 3	+0 1	+1 1	+1 0
25	+1 5	+2 6	+2 9	+0 5	+0 4	−0 7
26	+1 3	+1 6	+2 6	−0 6	+0 7	−0 8
27	+1 9	+2 3	+2 6	+0 1	+0 7	−0 5
28	+1 5	+2 5	+1 9	−0 2	0 0	+0 3
29	+1 0	+2 1	+1 9	−0 1	−0 0	+0 2
30	+0 5	+2 1	+1 6	+0 2	+0 4	+0 5
31		+1 6	+2 0		−0 5	
M.D.R.	+1 09	+1 63	+1 98	+1 15	+0 12	+0 08
Ex.Var.	1,5	2,0	1,8	2,9	1,8	2,3

No. 608.

1832.	June.	July.	Aug.	Sept.	Oct.	Nov.
1		−6·2	−5·1	−4·5	−5·5	−6·4
2		−6 2	−5 4	−5 2	−4 8	−7 4
3	−4·8	−5 9	−5 5	−5 2	−5 1	−7 5
4	−4 9	−7 5	−4 9	−5 4	−5 1	−6 2
5	−4 5	−7 2	−4 5	−5 8	−6 5	−6 2
6	−3 9	−5 7	−4 6	−6 6	−6 1	−5 9
7	−4 0	−5 4	−5 0	−5 1	−6 1	−5 4
8	−3 7	−6 3	−4 9	−5 7	−6 6	−4 8
9	−5 4	−6 3	−4 7	−5 2	−5 9	−5 7
10	−4 7	−6 3	−5 3	−5 1	−5 3	−5 7
11	−4 8	−6 5	−5 4	−5 8	−7 5	−6 2
12	−5 1	−6 5	−4 7	−4 8	−8 1	−6 2
13	−6 5	−5 7	−4 8	−4 5	−8 1	−6 2
14	−5 9	−6 0	−4 9	−5 4	−6 4	−6 9
15	−5 2	−6 7	−4 8	−5 8	−6 4	−7 0
16	−4 8	−6 6	−4 4	−5 8	−6 8	−7 2
17	−6 3	−6 7	−5 2	−5 8	−6 6	−7 3
18	−6 3	−6 7	−4 8	−5 6	−5 6	−6 4
19	−5 8	−6 9	−4 5	−3 9	−6 8	−6 3
20	−6 5	−5 7	−4 4	−5 6	−6 6	−6 7
21	−7 3	−4 8	−4 1	−5 1	−6 2	−7 5
22	−6 1	−4 8	−5 3	−5 0	−6 2	−6 9
23	−5 0	−4 9	−5 0	−6 1	−5 4	−7 9
24	−6 2	−4 9	−3 5	−6 1	−5 3	−8 4
25	−6 2	−5 1	−4 1	−5 8	−5 6	−7 4
26	−6 2	−6 4	−3 8	−5 4	−6 0	−7 5
27	−6 4	−5 2	−3 9	−6 6	−6 0	−7 7
28	−6 8	−5 2	−3 7	−7 0	−6 1	−6 9
29	−6 5	−5 3	−4 1	−5 4	−6 1	−5 8
30	−8 3	−5 3	−4 6	−5 5	−6 6	−7 1
31		−5 8	−4 8		−6 9	
M.D.R.	−5 65	−5 96	−4 60	−5 49	−6 19	−6 69
Ex.Var.	4,6	2,7	2,0	3,1	3,3	3,5

No. 615.

1832.	June.	July.	Aug.	Sept.	Oct.	Nov.
1		−2·1	−1·7	−2·4	−2·3	−5·4
2	−1·8	−2 1	−0 9	−2 5	−1 9	−5 8
3	−1 8	−2 7	−1 5	−2 5	−3 3	−5 9
4	−1 9	−3 2	−3 2	−2 2	−0 6	−5 1
5	−3 1	−3 0	−2 6	−1 7	−2 7	−5 1
6	−1 1	−2 6	−2 6	−2 0	−2 7	−4 9
7	−0 4	−2 1	−2 8	−3 5	−2 7	−4 8
8	−1 7	−2 9	−2 2	−3 1	−2 5	−4 5
9	−3 1	−3 0	−2 0	−2 5	−4 9	−5 4
10	−2 5	−2 7	−2 3	−2 5	−3 9	−5 3
11	−2 5	−4 3	−2 4	−2 0	−4 2	−6 4
12	−0 8	−4 3	−1 6	−1 8	−3 9	−6 4
13	−3 3	−2 1	−1 6	−1 0	−4 0	−6 7
14	−3 2	−3 7	−1 7	−4 1	−4 3	−5 8
15	−2 6	−2 4	−2 8	−4 2	−4 2	−5 8
16	−2 5	−2 4	−1 2	−2 9	−3 7	−5 6
17	−1 9	−4 0	−1 4	−3 0	−3 6	−5 6
18	−2 0	−2 0	−1 1	−2 3	−5 1	−5 8
19	−2 7	−4 1	−2 1	−2 5	−3 9	−5 8
20	−2 5	−4 5	−2 1	−2 6	−5 9	−5 1
21	−4 4	−2 5	−1 4	−2 4	−3 9	−5 2
22	−2 7	−2 4	−1 1	−2 4	−3 9	−5 7
23	−3 7	−2 4	−1 6	−2 2	−3 3	−5 2
24	−2 6	−1 5	−2 5	−2 3	−4 8	−4 7
25	−2 6	−2 4	−2 1	−1 3	−3 9	−5 6
26	−3 1	−3 9	−1 5	−2 0	−4 3	−5 7
27	−2 2	−3 0	−1 5	−2 3	−4 3	−6 6
28	−2 0	−2 6	−3 0	−2 7	−5 2	−6 0
29	−2 5	−1 6	−2 2	−1 7	−5 1	−6 2
30	−3 9	−1 6	−2 2	−2 3	−4 4	−6 2
31		−2 4	−1 7		−5 1	
M.D.R.	−2 46	−2 79	−1 96	−2 43	−3 82	−5 61
Ex.Var.	4,0	3,0	2,3	3,2	5,3	2,2

No. 651.

1832.	June.	July.	Aug.	Sept.	Oct.	Nov.
1	+1s2	+2s2	+2s7	+0s9	+1s9	+2s1
2	+0 9	+2 2	+1 7	+1 6	+3 2	+0 9
3	+1 3	+1 9	+2 6	+1 7	+2 5	+1 4
4	+1 3	+2 8	+1 5	+2 7	+2 0	+1 3
5	+1 4	−0 3	+2 0	+1 1	+2 5	+1 2
6	+2 1	+2 8	+2 0	+2 4	+2 5	+0 1
7	+1 9	+1 4	+1 0	+2 3	+2 5	+1 4
8	+1 2	+2 1	+2 7	+2 9	+2 4	+2 2
9	+1 2	+2 3	+1 6	+2 6	+2 1	+0 9
10	+1 5	+1 0	+1 7	+2 6	+2 3	+0 9
11	+1 5	+1 6	+1 8	+1 1	+0 9	+1 6
12	+1 4	+1 7	+2 5	+2 1	+1 0	+1 6
13	+0 7	+2 1	+2 5	+1 2	+1 0	+0 3
14	−0 2	+1 9	+2 9	+1 5	+1 5	+0 9
15	+1 5	+1 0	+3 1	+1 7	+1 5	+0 8
16	+0 3	+1 0	+2 7	+2 1	+2 1	+1 1
17	+1 2	+1 6	+2 7	+2 1	+1 9	+1 0
18	+1 3	+1 6	+3 3	+2 3	+1 9	+0 2
19	+0 7	+2 1	+3 1	+3 0	+1 2	+0 1
20	+0 6	+1 5	+3 1	+2 2	+1 2	+0 4
21	+2 0	+1 8	+2 7	+2 2	+1 2	−0 3
22	+0 9	+2 1	+2 9	+2 2	+1 2	+0 4
23	−0 3	+2 1	+2 6	+2 5	+1 5	+1 1
24	+1 6	+2 0	+1 8	+2 4	+1 0	+1 2
25	+1 6	+1 1	+3 3	+1 3	+1 7	+1 2
26	+1 4	+2 5	+2 3	+2 1	+2 2	+1 3
27	+1 0	+2 4	+2 3	+2 7	+2 2	+0 9
28	+1 8	+1 8	+2 7	+2 3	+1 4	+0 8
29	+0 9	+2 4	+0 9	+3 7	+1 4	+0 8
30	−0 1	+2 5	+1 1	+1 9	+2 0	+0 7
31		+2 2	+0 9		+0 5	
M.D.R.	+1 12	+1 87	+2 28	+2 11	+1 76	+0 95
Ex.Var.	2,4	3,1	2,4	2,8	2,3	2,0

No. 652.

1832.	June.	July.	Aug.	Sept.	Oct.	Nov.
1	−1s9	−1s6	−1s7	−1s7	−1s2	−1s1
2	−1 3	−1 5	−1 5	−1 4	−1 0	−0 9
3	−1 8	−2 2	−1 8	−1 4	−1 7	−0 9
4	−1 8	−2 1	−1 4	−1 2	−0 8	−1 0
5	−1 9	−1 9	−1 1	−1 5	−0 8	−0 9
6	−1 5	−1 8	−1 1	−1 4	−0 9	−1 5
7	−0 9	−1 3	−1 2	−1 0	−1 1	−0 8
8	−1 7	−1 4	−2 1	−1 3	−0 5	−1 1
9	−1 6	−1 4	−1 6	−1 1	−1 2	−1 2
10	−1 2	−1 8	−2 1	−1 1	−0 9	−1 3
11	−1 1	−2 6	−2 1	−0 5	−1 1	−1 3
12	−1 7	−2 6	−1 4	−1 4	−1 2	−1 2
13	−1 8	−0 9	−1 4	−0 9	−1 3	−1 7
14	−1 6	−1 9	−2 2	−1 3	−1 2	−1 3
15	−1 4	−1 4	−1 3	−1 4	−1 2	−1 3
16	−1 2	−1 3	−1 1	−0 8	−1 5	−1 4
17	−1 4	−2 0	−1 6	−0 8	−1 0	−1 6
18	−1 4	−1 6	−1 7	−0 2	−0 9	−1 4
19	−2 1	−2 2	−1 0	−1 7	−1 4	−1 4
20	−1 6	−0 6	−1 1	−0 9	−1 0	−1 2
21	−2 2	−2 2	−0 8	−1 1	−1 3	−1 2
22	−1 6	−1 3	−1 7	−1 0	−1 3	−1 3
23	−1 7	−1 4	−1 8	−0 9	−0 9	−1 1
24	−1 4	−1 3	−0 7	−0 9	−0 7	−1 0
25	−1 3	−1 6	−0 3	−1 5	−1 1	−1 2
26	−1 3	−0 9	−1 1	−1 5	−0 8	−1 1
27	−1 4	−1 5	−1 2	−1 8	−0 7	−1 5
28	−1 7	−1 5	−1 6	−1 8	−0 8	−1 1
29	−1 6	−1 6	−1 0	−1 7	−0 9	−1 1
30	−2 4	−1 7	−2 1	−1 2	−1 1	−1 2
31		−0 9	−1 8		−1 9	
M.D.R.	−1 58	−1 61	−1 44	−1 10	−1 08	−1 21
Ex.Var.	1,5	2,0	1,9	1,6	1,4	0,9

No. 657.

1832.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1		−2s4	−3s0	−2s1	−4s0	−6s0
2		−2 6	−2 8	−2 7	−3 8	−4 7
3		−2 6	−2 8	−2 7	−3 9	−4 7
4		−1 8	−2 4	−2 1	−4 6	−4 8
5		−2 5	−2 3	−3 2	−4 6	−5 2
6		−2 5	−2 8	−3 3	−5 0	−7 0
7		−2 5	−2 1	−3 2	−5 0	−5 0
8	−3s2	−2 6	−2 2	−4 2	−4 6	−5 8
9	−3 1	−2 6	−2 3	−5 3	−5 7	−5 6
10	−3 3	−2 0	−2 4	−3 8	−5 7	−5 6
11	−3 0	−2 1	−2 9	−3 4	−5 0	−5 7
12	−2 9	−2 1	−2 9	−3 3	−5 0	−5 8
13	−2 9	−2 0	−2 9	−3 3	−5 5	−5 6
14	−2 9	−1 8	−2 9	−3 9	−5 7	−5 6
15	−2 9	−1 7	−3 1	−4 0	−5 6	−5 8
16	−2 9	−1 9	−2 9	−4 0	−4 8	−6 2
17	−2 5	−2 4	−3 0	−3 8	−4 9	−6 1
18	−2 5	−2 1	−3 3	−4 2	−5 4	−4 7
19	−3 1	−2 1	−3 0	−4 0	−5 4	−6 4
20	−2 8	−2 0	−3 1	−4 0	−5 7	−6 1
21	−3 1	−1 3	−3 2	−4 8	−5 2	−6 9
22	−4 5	−1 7	−3 1	−4 8	−5 2	−6 9
23	−2 1	−2 1	−2 8	−4 3	−4 4	−5 7
24	−2 1	−2 6	−2 8	−4 1	−4 9	−5 7
25	−2 6	−2 6	−2 6	−4 7	−4 7	−5 4
26	−2 6	−2 4	−2 3	−4 3	−4 8	−6 1
27	−2 3	−2 4	−2 1	−4 2	−4 9	−6 2
28	−2 7	−2 7	−2 6	−4 1	−5 8	−6 4
29	−2 7	−3 0	−2 2	−4 1	−5 5	−6 3
30	−2 6	−3 3	−2 2	−3 8	−5 3	−6 4
31	−1 8	−3 5		−5 5		−6 3
M.D.R.	−2 80	−2 32	−2 70	−3 81	−5 02	−5 88
Ex.Var.	2,4	2,2	1,2	3,4	2,0	2,3

No. 662.

1832.	June.	July.	Aug.	Sept.	Oct.	Nov.
1		+1s2	+2s0	+2s9	+3s1	+4s5
2		+1 2	+2 1	+3 1	+3 5	+3 9
3	+0s3	+1 1	+2 1	+3 0	+3 3	+3 5
4	+0 3	+1 2	+1 7	+2 9	+3 9	+3 9
5	−0 1	+0 5	+2 4	+2 7	+3 6	+3 9
6	+0 7	+1 3	+2 4	+3 2	+3 6	+2 8
7	+0 7	+1 4	+2 1	+3 7	+3 6	+3 1
8	+0 6	+1 6	+1 8	+2 1	+3 9	+3 4
9	+0 5	+1 5	+1 8	+3 2	+3 4	+2 7
10	+0 7	+1 5	+2 0	+3 2	+3 5	+2 7
11	+0 8	+0 9	+1 9	+3 1	+4 0	+3 6
12	+0 2	+0 9	+2 0	+2 8	+3 6	+3 5
13	+1 0	+1 4	+2 0	+3 7	+3 7	+3 4
14	+0 3	+1 6	+2 2	+3 0	+3 6	+3 4
15	+0 3	+1 4	+2 2	+2 9	+3 6	+3 3
16	+0 6	+1 4	+2 2	+3 4	+3 6	+3 8
17	+0 6	+1 4	+2 7	+3 4	+3 5	+3 7
18	+0 6	+1 0	+2 2	+3 4	+3 8	+3 5
19	+0 6	+1 7	+3 1	+3 3	+3 5	+3 5
20	+0 4	+1 5	+3 1	+3 0	+3 2	+2 9
21	+0 7	+1 7	+2 8	+3 3	+3 5	+4 2
22	+1 1	+1 8	+3 1	+3 4	+3 4	+3 4
23	+0 7	+1 8	+2 5	+3 5	+3 6	+3 6
24	+0 9	+1 8	+3 0	+3 5	+3 8	+4 1
25	+0 9	+1 8	+3 0	+2 7	+3 2	+3 6
26	+1 0	+2 0	+2 9	+2 9	+3 5	+3 5
27	+0 8	+1 7	+3 0	+3 0	+3 6	+3 7
28	+0 9	+2 1	+2 9	+2 6	+3 9	+3 1
29	+0 8	+2 5	+2 7	+3 3	+4 0	+3 5
30	+0 1	+2 4	+2 2	+3 0	+3 8	+3 1
31		+1 0	+3 1		+2 6	
M.D.R.	+0 60	+1 47	+2 42	+3 11	+3 50	+3 51
Ex.Var.	1,2	2,0	1,4	1,6	1,4	1,8

No. 663.

1832.	June.	July.	Aug.	Sept.	Oct.	Nov.
1	+1s9	+1s2	+1s3	+2s7	+2s4	+3s6
2	+1 5	+1 1	+2 2	+2 4	+2 9	+3 0
3	+1 2	+1 6	+1 5	+2 4	+2 2	+3 0
4	+1 1	+1 0	+1 7	+2 4	+3 9	+4 2
5	+0 9	+0 7	+2 0	+2 2	+3 1	+4 2
6	+1 3	+1 5	+2 1	+2 5	+3 1	+3 6
7	+2 0	+1 9	+1 8	+2 4	+3 6	+3 4
8	+2 0	+1 5	+1 5	+2 4	+3 5	+4 0
9	+1 2	+1 5	+2 4	+2 8	+2 8	+3 5
10	+1 4	+1 5	+1 3	+2 8	+3 5	+3 5
11	+1 5	+1 4	+1 4	+2 6	+3 3	+3 7
12	+1 2	+1 4	+1 7	+2 8	+3 3	+3 8
13	+0 8	+0 6	+1 8	+2 7	+3 2	+3 1
14	+1 0	+2 2	+1 6	+2 4	+2 8	+3 7
15	+1 8	+1 6	+2 3	+2 4	+2 8	+3 8
16	+1 2	+1 6	+2 4	+2 9	+3 0	+3 8
17	+1 2	+1 6	+1 8	+2 9	+3 3	+3 6
18	+1 3	+1 0	+1 8	+2 7	+3 2	+3 5
19	+1 4	+1 5	+2 2	+2 8	+3 2	+3 5
20	+1 1	+1 7	+2 3	+2 6	+3 4	+3 8
21	+0 9	+2 2	+2 7	+2 9	+2 6	+3 8
22	+1 7	+1 8	+1 7	+2 8	+2 6	+3 4
23	+1 9	+1 9	+1 9	+2 5	+2 6	+3 8
24	+1 6	+2 0	+2 0	+2 4	+3 8	+4 1
25	+1 5	+1 4	+2 2	+2 2	+3 3	+3 7
26	+0 5	+2 3	+2 8	+1 9	+3 6	+3 7
27	+1 3	+1 5	+2 9	+2 0	+3 5	+3 5
28	+0 5	+2 2	+2 7	+1 6	+3 6	+3 7
29	+1 8	+2 0	+3 0	+2 3	+3 7	+3 1
30	+1 1	+1 9	+2 2	+2 3	+3 9	+3 8
31		+1 7	+2 5		+3 0	
M.D.R.	+1 36	+1 58	+2 11	+2 51	+3 23	+3 63
Ex.Var.	1,5	1,7	1,7	1,3	1,7	1,2

No. 666.

1832.	July.	Aug.	Sept.	Oct.	Nov	Dec.
1		+0s1	+0s4	+0s4	+1s0	+0s1
2		+0 5	+0 5	+0 1	+0 7	+0 7
3	−0s1	+0 4	+0 4	+0 7	+0 7	+0 7
4	−0 5	+0 4	+0 1	+1 4	+0 7	+0 7
5	−0 6	+0 5	+0 6	+0 5	+0 7	+0 4
6	−0 2	+0 4	−0 2	+0 5	+0 2	−0 1
7	+0 1	+0 5	+0 7	+0 5	+0 3	+0 3
8	+0 2	−0 2	+0 1	+0 7	+0 6	0 0
9	+0 2	0 0	+0 5	+0 1	0 0	+0 3
10	−0 6	+0 2	+0 5	+0 2	0 0	+0 4
11	−0 5	+0 1	+0 4	+0 7	+0 6	+0 3
12	−0 5	−0 1	+0 6	+0 6	+0 5	+0 6
13	−0 0	−0 1	+0 7	+0 7	+0 2	+0 6
14	−0 2	+0 3	+0 8	+0 3	+0 2	+0 6
15	−0 1	+0 2	+0 5	+0 3	+0 2	0 0
16	−0 1	+0 2	+0 6	+0 5	+0 3	+0 2
17	−0 0	+0 2	+0 5	+0 4	+0 2	+0 2
18	−0 1	+0 3	+0 4	+0 6	+0 2	+0 5
19	−0 3	+0 8	+0 8	+0 5	+0 1	+0 8
20	+0 1	+0 8	+0 5	+0 2	+0 1	+0 3
21	+0 1	+0 8	+0 6	+0 4	+0 4	−0 2
22	+0 2	+0 8	+0 6	+0 4	+0 6	−0 2
23	+0 1	+0 8	+0 7	+0 6	+0 2	+0 6
24	+0 5	+0 4	+0 6	+0 5	+1 0	+0 6
25	+0 4	+0 8	+0 9	+0 5	+0 5	+0 8
26	+0 2	+0 8	+0 4	+0 6	+0 5	+0 6
27	+0 4	+0 8	+0 7	+0 6	+0 5	+0 5
28	+0 3	+0 4	+0 3	+0 6	+0 3	−0 1
29	+0 4	+0 2	+1 0	+0 7	+0 1	−0 1
30	+0 5	+0 5	+0 5	+0 3	+0 2	0 0
31	+0 4	−0 3		+0 2		−0 1
M.D.R.	0 00	+0 37	+0 51	+0 53	+0 39	+0 35
Ex.Var.	1,1	1,1	1,2	1.2	1,0	1,0

No. 673.

1832.	June.	July.	Aug.	Sept.	Oct.	Nov.
1	+1s5	+1s8	+2s9	+3s8	+3s9	+4s8
2	+1 3	+1 8	+3 0	+3 6	+3 2	+5 1
3	+1 8	+2 1	+2 7	+3 6	+4 3	+5 2
4	+1 8	+1 5	+2 3	+3 3	+4 4	+5 2
5	+1 6	+1 4	+3 0	+3 6	+3 8	+5 2
6	+2 0	+1 2	+3 0	+3 7	+3 8	+3 5
7	+2 0	+1 9	+2 7	+2 9	+3 7	+4 0
8	+1 8	+2 3	+2 5	+3 5	+4 4	+2 9
9	+2 2	+2 3	+2 4	+3 4	+3 0	+2 6
10	+2 0	+1 9	+2 4	+3 5	+3 8	+2 6
11	+2 0	+1 6	+2 4	+3 4	+4 3	+3 4
12	+1 5	+1 6	+2 6	+3 5	+4 1	+3 5
13	+2 0	+1 7	+2 7	+3 2	+3 9	+2 9
14	+1 7	+1 7	+2 9	+3 4	+3 4	+4 5
15	+2 1	+1 8	+2 5	+3 2	+3 4	+4 4
16	+1 6	+1 8	+2 7	+3 1	+3 9	+3 0
17	+2 0	+1 6	+3 0	+3 1	+3 3	+2 9
18	+2 0	+1 4	+2 3	+3 3	+3 9	+4 0
19	+1 5	+1 7	+3 6	+3 4	+3 2	+3 9
20	+1 6	+1 2	+3 6	+3 4	+2 9	+2 5
21	+1 6	+2 3	+3 4	+3 4	+3 4	+3 7
22	+2 1	+2 3	+3 2	+3 5	+3 4	+2 8
23	+1 9	+2 2	+3 4	+4 1	+4 0	+3 1
24	+1 8	+2 6	+3 8	+4 1	+4 2	+4 1
25	+1 8	+2 4	+3 1	+3 4	+2 8	+3 7
26	+1 3	+2 6	+3 5	+3 4	+4 4	+3 8
27	+1 5	+2 4	+3 5	+3 7	+4 4	+2 7
28	+1 6	+3 0	+3 4	+3 3	+4 5	+2 0
29	+1 1	+2 7	+3 2	+3 8	+4 4	+1 3
30	+1 2	+2 7	+2 9	+3 9	+4 3	+0 7
31		+2 6	+3 0		+3 8	
M.D.R.	+1 73	+2 02	+2 98	+3 62	+3 82	+3 47
Ex.Var.	1,1	1,8	1.3	1.2	1,7	4.5

No. 674.

1832.	June.	July.	Aug.	Sept.	Oct.	Nov.
1		+0s5	+1s1	+1s2	+0s5	+2s1
2		+0 5	+1 0	+1 4	+1 1	+2 7
3		+0 7	+0 6	+1 4	+1 3	+2 7
4		+0 4	+0 2	+1 0	+2 4	+2 4
5		−0 2	+1 0	+1 1	+2 5	+2 5
6		+0 8	+1 1	+1 4	+2 5	+3 0
7		+0 8	+0 9	+1 6	+2 5	+2 7
8	+2s0	+1 2	+1 1	+2 3	+2 3	+3 3
9	+1 3	+1 2	−0 2	+1 5	+3 1	+3 1
10	+1 8	+0 7	−0 1	+1 4	+2 2	+3 2
11	+1 8	+0 5	0 0	+1 3	+1 7	+3 4
12	+1 5	+0 5	+0 1	+3 1	+1 6	+3 4
13	+0 9	+0 1	+0 1	+1 1	+1 5	+2 9
14	+0 6	+0 4	+0 4	+2 3	+2 2	+2 5
15	+1 3	+0 8	+0 2	+2 1	+2 1	+2 6
16	+1 6	+0 7	+0 6	+2 6	+1 9	+2 7
17	+1 5	+0 6	+0 6	+2 6	+1 7	+2 6
18	+1 5	+0 2	+1 6	+1 6	+2 2	+2 7
19	+0 5	+1 0	+1 4	+2 4	+2 2	+2 8
20	+0 2	+0 7	+1 4	+1 9	+2 0	+2 6
21	+0 9	+1 0	+1 1	+2 0	+2 7	+2 9
22	+1 0	+1 6	+1 3	+2 0	+2 7	+2 8
23	+1 3	+1 5	+1 6	+1 6	+2 7	+2 5
24	+1 8	+1 9	+2 2	+1 5	+2 9	+2 5
25	+1 9	+1 3	+1 5	+0 5	+2 1	+2 6
26	+1 5	+1 2	+1 9	+0 2	+2 7	+2 5
27	+1 6	+1 2	+1 9	+0 3	+2 7	+2 7
28	+1 2	+1 4	+2 2	+0 0	+2 8	+3 6
29	+0 9	+1 1	+1 8	+0 2	+2 9	+3 1
30	−0 3	+1 1	+2 3	+1 5	+2 1	+2 6
31		+1 2	+1 6		+2 6	
M.D.R.	+1 23	+0 87	+1 02	+1 54	+2 21	+2 79
Ex.Var.	2,3	2,1	2,4	3,1	2,4	1,5

A Journal of the In-door Thermometer, at Noon, at the Royal Observatory, Greenwich, 1832.

Day of the Month.	June.	July.	August.	Sept.	October.	Nov.
1	62°	71°	69°	67°	68°	58°
2	64	73	70	65	68	58
3	67	70	71	66	66	58
4	67	72	69	67	64	56
5	65	72	67	68	63	51
6	64	72	68	67	60	51
7	64	69	69	68	58	51
8	64	68	72	67	57	49
9	65	69	74	65	56	
10	64	69	77	65	60	47
11	65	69	78	65	65	47
12	68	72	72	62	64	50
13	70	72	73	62	62	53
14	67	71	73	62	61	53
15	66	70	73	62	60	51
16	65	70	72	62	60	52
17	67	74	71	64	58	51
18	70	72	69	61	58	51
19	72	68	67	60	58	50
20	71	67	69	60	55	52
21	70	67	69	62	55	52
22	67	65	70	64	57	53
23	66	65	67	64½	56	54
24	64	66	67	69	55	55
25	64	68	65	72	54	55
26	63	68	65	72	55	54
27	66	68	63	72	54	50
28	70	68	62	72	57	49
29	73	68	60	71	55	50
30	74	68½	61	70	56	50
31		68	64		57	
Max. . .	74	74	78	72	68	58
Min. . . .	62	65	60	60	54	47

It has been already observed, that, with the exception of No. 521, the foregoing chronometers have all been made within the two last years. There are, among them, chronometers with three different escapements, as well as three different kinds of balance. Two of these, it is presumed, will not be affected by magnetic attraction, the balance and springs being composed of gold, platina, and silver, on which experiments will be shortly commenced, in comparison with a chronometer made of the common materials.

The ruinous prices at which chronometers have hitherto been kept up, cannot be otherwise than detrimental to the best interests of the country. Applied, as they are, to a purpose paramount to all others, that of protecting life, and, next to that, the advancement of science, and the extension of commerce, he certainly confers a benefit on society at large, who will break through the spell of years, by reducing the price of the chronometer, whilst he leaves its merits unimpaired, and thereby enables every commander who goes to sea, to supply himself with so desirable a means of preserving his vessel from wreck. This spirited measure has been adopted by Messrs. Arnold and Dent, who have not only done so, but have united with it a series of experiments, before alluded to, likely to produce still further reductions in the price at which they have already offered to supply their best chronometers to Government.*

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* Messrs. Arnold and Dent have offered to supply Government with any number of the *best* chronometers, at the low price of forty guineas each; and the prices of the foregoing chronometers vary from thirty-five to forty guineas, with the exception of No. 521, which is now on the public trial at the Royal Observatory.

If a practical person acquainted with the construction of the machine, cannot tell, on looking into it, whether it be really a good one or not, the purchaser, who has no experience in it, is much less calculated to do so. Therefore, his only test can be the rate, and on this ought to depend the price.

It is with the view of apprising our readers of this measure of Messrs. Arnold and Dent, and of enabling those who may be interested in the subject, to form, by their means, a tolerable idea of the present value of a good chronometer, that we have inserted the foregoing rates; and we have also done this more particularly, in order to shew, that, although so complete a revolution has taken place in the price of the *best* chronometers, their performance has not deteriorated in consequence, but that, in fact, the machine itself remains as it was before. It must not, however, be forgotten, that the above chronometers are new, and have not been purposely selected from being particularly good, but that they are taken as they happen to have been made. The six best may be considered as specimens of what may be safely considered as good chronometers.

It might be advanced, that the prices which government pay for chronometers, should be the criterion by which to determine them in general. But this cannot be conceded. The government of every enlightened country must be looked on as the patron of the arts and sciences in that country, and as such, is bound to encourage them. That it is the object of our own government to do so is evident, from the sum of £500 having been annually devoted to this purpose, for the last ten years, as we have explained in a former number: and for the same reason has government not only rewarded the maker of a chronometer with the first prize, although the same machine might not have gone within the limits of the trial number in a former year, but also has paid in the same proportion for a good chronometer. This has been done by government, but it must be considered as having been done solely with the view of encouraging the cultivation of the art in this country. At the same time, however, it has had a bad tendency. It has frequently happened, of late, that the commanders of vessels, on being asked forty pounds for an excellent chronometer, have replied, that they want one of the best, adding, that, twenty years ago, they have given a hundred guineas for one. That such a machine can be obtained now for so low a sum as forty pounds, appears to them quite impossible. We hope, however, soon to see this prejudice done away, as it most assuredly will be, and with so fair a commencement on the part of the maker, the fault will lie with others, if they do not at once see the benefit of the change.

In closing these remarks, a sense of justice induces us to apprize our readers, that the present reduction in the price of chronometers is principally, we believe, due to the exertions of Mr. Dent. The name of Arnold needs no commendation here; the present Mr. Arnold has successfully maintained the renown of his father, in this important branch of the arts and sciences. That Mr. Dent's skill bids fair to preserve this high character, may be safely inferred from his having produced the best chronometer that has yet obtained the first premium at the public trials, besides others with which we are acquainted, that have been equally successful. And that our readers may see that he set to work in earnest, as soon as he became the partner of Mr. Arnold, (to whom his practical skill, we believe, was his only recommendation,) in reducing the prices of chronometers; we have extracted from the observations of Captain Fitz Roy, now commanding H. M. S. Beagle, the result given by one which was purchased of him in the summer of 1831, for £50. The number of this chronometer is 633, and of twenty-two chronometers embarked with Captain Fitz Roy, in the Beagle, it has given the longitude of Rio within one minute in space of the mean resulting from the whole number. So close an approximation attained with a moderate price, is a convincing proof, that when chronometers go forth from the hands of the first makers, a reduction in their price is no reduction in their merit.

When Lord Howe sailed from Spithead, previous to the memorable first of June, it is said that a chronometer was not to be found in his fleet. Some of His Majesty's ships sailed about the same time, for the protection of the trade in the East Indies. These were the Centurion, the Orpheus, and the Resistance, on board of which vessels no chronometer was to be found; and, instead of making the passage to Madras in ninety or a hundred days, a circumstance which is now of every-day occurrence, it cost them more than six months. Since those days, however, great changes have taken place in the whole science of navigation. Chronometers, from being scarce, and immoderately expensive, are now become plentiful and cheap; they are liberally supplied by government to the ships of the state; and, in proportion as their number has increased, so has a knowledge of their use been cultivated.

In fact, it is gratifying to find, in the midst of the acknowledged refinement of the present day, in the whole circle of the arts and sciences, that the science of navigation is by no means behind the rest; and he deserves well of his country, be he who he may, that contributes towards the perfection of this science, by rendering one of its principal sources, the use of the chronometer, every day more general, in the reduction of its price. Much as the use of this valuable machine has increased of late years, we trust that the time is not far distant, when the captains of our numerous shipping, of all descriptions, will no more think of going to sea without a chronometer, than without an anchor and cable.

We have here touched only on the value of the chronometer. In some of our future numbers, we propose considering the various component parts of the machine, and the several improvements which have been made in them.

IV.—The River Amazon, and its Brazilian Tributaries.

Considered with a view to their Navigation by Steam.

The river Amazon, also called Maranhao by the Portuguese, and Guienna by the Indians, after Pinzon had passed its spacious outlet, was discovered in the interior of the Continent by his compatriot, Francisco Orellana, whose name it also bears. Orellana descended it from the confluence of the Napo to the ocean, in the year 1539, and, in accordance with the superstitious customs of the early discoverers of new countries, he fabricated the story of its banks being inhabited by a race of warlike women; to which circumstance this mighty river owes its present name.

In the year 1637, Pedro Teixeira, a Portuguese, conducted a flotilla of canoes from Para up the Amazon to the river Napo, and advanced up the latter to a point where it was no longer navigable. On his return, he gave a circumstantial report of both rivers, as did the Jesuit Christoval da Cunha, who returned wth him from Quito; but neither of them met with any of the Amazons which Orellana pretended to have seen. This river, notwithstanding the recent claims of some travellers in favour of the North American rivers, is, without exception, the largest in the whole world. In a course of more than four thousand miles, it is designated by various names. The Portuguese style it the Amazon for about seven hundred miles, as far as the mouth of the Rio Negro; from that point upwards to the confluence* of the Ucayle it is called the Solimoes, above which it receives the name of Maranhao. For some time it was doubtful whether the Ucayle or the Maranhao was its principal head; the first, unquestionably, has the more extensive course, and is wider at their union than the latter.

The Tanguragua issues from Lake Hyœuricocha in latitude 10½° S. to the districts of Huanaco, about one hundred miles north-east of Lima. It runs north-west for the space of three hundred and fifty miles between the two Cordillera of the Andes, as far as the town of Juan de Bracamoras, where it is called the Maranon. At this point, where it begins to be navigable, it receives the Chinchipe on the left, which comes from the north-west; and on the right the Chachapoyas, which flows from the south-east, both navigable. Here it inclines to the north-east until it receives the Santiago, formed by several torrents precipitating from the mountains of Loxa in Quito. In this interval of one hundred and forty miles, about mid-way it receives the Chuchunga, navigable only for the distance of twelve miles. It should be mentioned that the port of Bracamoras is on the left bank, and that almost immediately below the town itself, the waters of the river are contracted between two mountains, and, running at a furious rate, descend by several falls. Below the Chuchunga it flows through the narrow strait of Cumbenama, and again by that of Escombragas; neither of which are dangerous. At the confluence of the Santiago, the Maranon is five hundred yards wide, but, three miles farther, running in an easterly direction, it becomes narrow in traversing the interior Cordillera of the Andes, and is reduced in some places to fifty yards across. The current descends through this contracted channel at the rate of six miles an hour; at its extremity is situated the city of Borja. Seventy miles below this city, it receives on the left the Marona, which descending from the volcano of Sangahy, is not inferior to the Santiago; and at forty miles farther, the considerable Pastaza, which originates also in the Cordillera. The river Chambyra, and then the Tigre, both coming from the north-west, successively fall into the Maranon.

Sixty miles below the mouth of the Tigre is the magnificent confluence of the Tanguragua with the Ucayle. The latter takes its rise in 18° south latitude, south-east of the Lake Chucuito or Titicaco, one hundred and twenty miles north-east of the city of Arica. It runs to north and north-west under the name of Beni, until it forms a junction with the Apurimaco in latitude 11° south, when both rivers assume the name of Ucayle. The Apurimaco rises a few leagues north of the city of Arequipa, between the Lake Chucuito and the Pacific ocean, from which it is only distant about fifty miles. It runs northwards, describing considerable windings, and receiving various other streams, among which the most important are the Pampas on the left, in 13° 10′ S. The Urubamba on the right in 12° 15′ S., and the Montaro in 12° 6′ S., where it changes its direction to the north-east. Before mingling its waters with the Beni, it receives on the left the Perene; and on the right, eighteen miles above its embouchure, the Paucatamba. The Montaro issues from the Lake Chinchayocha in the districts of Huanaco in 11° S. and flows for a considerable space to the south-east along the Cordillera, describing extensive windings. The largest tributary of the Ucayle, after it assumes this name, is the Rio Pachitea, which flows into it on the left in 8° 30′. The course of it, however, does not exceed two hundred miles, but it is justly celebrated for the beautiful scenery on its banks.

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* Mac-Taggart.

The Maranham, at the confluence where it takes this name, directs its course to the north-east for one hundred miles, receiving on the left the Napo, which originates in divers parts of the Interior Cordillera of the Andes, in the vicinity of Quito. From hence it flows to the south-east, receiving several others, and, after a course of five hundred and fifty miles, discharges itself by different channels formed by several islands, above which it is one thousand two hundred yards wide.

With this river, the Maranham becomes one thousand eight hundred yards wide, having yet acquired only a small portion of the volume of water with which it enters the ocean, from whence it is here distant one thousand three hundred miles in a *direct line.* At this part it inclines to the east, and, after a course of fifty miles, receives on the right the little river Cassequin, which comes from the south; twenty miles lower down, the Hyabara* enters it, taking its rise in the territories of the Toromonas in 11° 30′ S. Above one hundred miles farther is the mouth of the Ica, a large river, the source of which is in the skirts of the Cordillera, to the north-east of the Napo, and in the vicinity of St. Juan de Pasto, where it is called the Putumajo. The Hyutahy and the Hyurua rivers are next in succession. They are less than the preceding, being only three hundred and sixty fathoms wide. The Tefe, the Coary, and the Purus, successively join the Maranham on the right bank, and the latter by several mouths.

On its northern bank, the Maranham receives the great river Hyapura, after an extensive course from the province of Popayan.

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* Near the mouth of the Hyabara, on the north bank of the Amazon, is the Presidio de Tabatinga, the frontier post of Brazil. The Canoe men reckon its distance from Para upwards of one thousand six hundred miles, and the voyage thither occupies about twenty days.

This river, for a considerable distance, runs parallel to the Maranham, discharging itself into it by no less than nine channels, the mouth of the first being three hundred miles to the west of the last. The Maranham is estimated to be nearly a mile and a half wide, at a certain part free from islands, about twenty miles below the Purus, where no bottom can be found with a line of one hundred and three fathoms.

After the Hyapura its waters are swollen by the junction from the northern bank of the Rio Negro*, almost its equal in breadth and volume; and sixty miles lower down on the right by the Rio Madeira, nearly two miles wide, being the most considerable of all the tributary streams that flow into this wonderful river. The Rio Madeira was denominated the Cayary, until the Portuguese gave it the former appellation from the large trunk of trees, some of them cedar, of an extraordinary size, that floated down at the period of the floods; Madeira, in Portuguese, signifying timber, or wood. It takes this name at the confluence of the Guapore with the Maomare, which latter rises in the province of Potozi.

In front of the angle of the confluence of the Maomare with the Guapore, there is a rocky island, well adapted for the site of a fort, which would command the entrance of both rivers. From this point to the mouth of the Madeira is upwards of nine hundred miles. In the space of the first two hundred miles, the traveller encounters twelve falls, equally astonishing for their grandeur and extent. His attention will be first arrested by the Madeira, the same name as the river, far below the rocky island before alluded to. Three of these falls are found within the short space of a mile and a half. The canoes advancing up the river are unloaded, and carried a distance of half a mile. The Misericordia fall is next met, about two miles further down, and the danger of passing it depends upon the height of the waters of the river. Proceeding along another interval of the same space, the four falls of the Rebeirao burst upon the astonished traveller within the advance of four miles. Canoes are here for a considerable way dragged over-land. Twelve miles farther is the Figueiras, otherwise Araras, formed by small islands and large stones, but of no considerable extent. Upwards of twenty miles farther is the Pederneiras, where the river is thickly overspread with immense stones, rendering it necessary to transport the cargoes of the canoes for nearly half a mile. Descending ten miles farther, the Paredao is met with, where the course of the river is contracted, and its waters precipitated among rocks for a considerable space. The next in succession is the fall of the Tres Irmaos, formed by various small ones, for the distance of nearly a mile. Twenty miles lower is the Girau, where the river flows with great rapidity, separated by rocks, and precipitated over five falls in a short distance. Here again the canoes are obliged to be dragged over-land. Five miles farther is the Caldeirao de Inferno, three miles in extent, forming in one point a most dangerous whirlpool, which requires much vigilance and labour on the part of the canoe-men to avoid. Eighteen miles beyond the Caldeirao is the fall of Morinhos, deriving its name from some small morros, or rocks, a short distance from the western bank, and covered with sarsaparilla. At a distance of twelve miles farther down, the beautiful fall called Salto do Theotina is discovered. It is an accumulation of rugged rock, twenty-six feet high, broken into four parts, and dividing the waters of the Madeira into as many channels, each being the size of a considerable river.

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* About thirty miles from San Jose, the frontier Portuguese post on this river, one thousand five hundred miles from Para, is the mouth of the Rio Cassequiary, being a channel of one hundred miles, and forming a communication between the Oronooco and the Amazons!!!

Parallel to this majestic barrier, a reef of rocks, a little lower down, extends from the eastern nearly across to the western bank, impelling the volume of waters of three channels into a fourth, the whole flowing with great rapidity by this strait between the extremity of the reef and the left bank of the river. It is here necessary to transport the canoe over-land for nearly half a mile. Three miles lower down is the fall of St. Antonio, which the river passes in three distinct channels formed by two small stony islands.

This is the first that interrupts the navigation of the canoes proceeding upwards; it is situated in the latitude of 8° 48′ S., and is distant about five hundred miles from the confluence of the Madeira with the Maranham. Three months are generally occupied in advancing up from this fall to that of Guajirumerim in the Guapore. From the fall of St. Antonio to the mouth of the Madeira, there are more than thirty islands from three to ten miles in length, almost the whole of them well covered with fine timber. The waters of Rio Negro and the Madeira increase the width of the Maranham to nearly four miles; and when there are parallel islands, it is at some places eight, and at others much more. About two hundred miles in a direct line, or three hundred by the windings of the river, below the Rio Madeira, is the mouth of the large river Tapajos; and two hundred miles farther to the east, that of the Rio Xingu, equal if not superior to the Tapajos, both taking their rise in Matto Grosso. At the confluence of the latter, the Amazon inclines to the north-east for the distance of one hundred and forty miles, increasing sensibly in width as it approaches the equator, when it discharges itself into the ocean by a mouth twenty-five to thirty miles wide. Eighty miles below the Xingu, there is a channel called Tagypuru, in certain parts very narrow, and trending towards the south-east as far as the mouth of the Rio Annapu, where it becomes fifteen miles wide, with many islands, and flows to the east until it joins the Rio Tocantins. This river comes from the centre of the province of Goyaz, and at this part inclines to the north-east, increasing considerably in width, and entering the ocean by an embouchure equal to that of the Amazon. There is a remarkable distinction between the two rivers, highly illustrative of the magnitude and importance of the Amazon. The Tocantins, for some leagues up, is impregnated with salt water; while the Amazon discharges its volume of pure water many leagues into the sea, having acquired, by its rapidity and prodigious body, a preponderating power over the waters of the ocean, until at length it is lost in its fathomless bed.

The vessels that navigate to the Upper Amazon are formed of trunks of trees, from forty to sixty feet in length; they are excavated into the form of canoes, being retained in this shape by knees, to which are nailed planks to make them higher, having a round prow and a poop with a rudder. They always retain the name of canoes, and have two masts, in order to proceed up with an easterly wind, depending on the impulse of the current to descend. The tide advances up the Amazon as far as the town of Obydos, more than five hundred miles from Mocapa, computing by the bed of the river: with a strong wind it swells like the sea, but, immediately the wind subsides, it becomes tranquil by the power of the current, which dissipate the advancing waves in a moment.

(To be concluded in our next.)

V—Passages to Quebec by the Ship Robertson, of Glasgow.

A very numerous meeting of the persons who had subscribed, as well as others who felt an interest in the matter, took place at the Exchange Reading Room, at Quebec, last autumn, to present a silver cup to Captain Neil, of the Ship Robertson, of Glasgow, as a token of their admiration of the skill and enterprize he displayed in making, for the first time in one season, three voyages and back from Great Britain to Quebec.

Mr. John Fisher, who had been deputed by the committee to present the cup to Captain Neil, addressed the meeting as follows:

Gentlemen,—The present meeting has been called to do honour to Captain Neil.

The first vessel known, the largest ever built, and for the most extraordinary occasion that ever occurred since the creation of the world, was Noah's ark; the proportions and model of which have been approved by scientific men of modern times, as the most suitably adapted for the purpose designed.

The next account we have of ships or vessels is about five hundred years after; they were small in size, and of rude construction, making short voyages in the Mediterranean, the Red Sea, and perhaps to India: we afterwards read of the Phœnicians, Greeks, and Romans, employing ships in their wars and commerce with other nations; and, as they were ignorant of the magnetic needle, they were guided principally by landmarks, and never ventured far from the shore.

But in the fourteenth century, when the mariner's compass had been invented and the phenomenon discovered of the needle being constantly pointed to the polar star, a new field for navigation was opened, yet acted upon with fear and great caution. But the advantages of science and experience now enable the mariner to venture with boldness and security, and to conduct his vessel through the trackless waters to his far distant port, with as much confidence as if his course were pointed out by landmarks.

And to the science of navigation we are indebted for our intercourse with other nations, the knowledge we have of their climate, soil, produce, useful arts and manufactures, which would have remained unknown to us to this time, or known to little useful purpose.

The art of ship-building and the science of navigation, joined with the knowledge and use of printing, must be esteemed as the most valuable in the circles of science, as affecting more generally and sensibly, the comforts and luxuries of common life, as the grand medium through which the Bible and Missionaries and knowledge of a Saviour's love, are to be conveyed to heathen nations, who are still sitting in moral darkness, and whose dwellings are the habitations of cruelty; the enlightening of whom, interests us all, not only as Christians, but as merchants and philanthropists.

Addressing himself to Captain Neil, Mr. Fisher then said :—

Sir,—Although less able to do justice to the duty devolved to me, than many gentlemen now present, it is still very gratifying to my feelings to be their organ of conveying to you the sentiments of esteem they feel for you as an individual, and the expression of their admiration of that energy, perseverance, and nautical skill, which have enabled you to conduct your vessel six times during one short season, between this port and Europe.

Thirty years ago, it was thought to be something extraordinary to make two voyages to this port; but for you, Sir, has been reserved the credit of being the first man to perform three complete voyages in one season between Great Britain and Canada; an example which we hope will be frequently and successfully imitated by others. As my fellow-subscribers consider that you have rendered essential advantages to the trade of the country, they wished to convey to you a more lasting token of their obligation; and a silver cup was ordered, which I now have the honour of giving into your hands. I beg of you not so much to bear in mind the value of the cup, as the manner and occasion of the gift. And may you long be spared to enjoy your well-earned reputation!

Captain Neil to this address answered as follows :

Sir,—I thank you most respectfully for so valued a mark of the esteem of those whose approbation it has always been my study and interest to cultivate. I have no pretension to oratory—my thanks, though brief, are however given with all the warmth and straightforward sincerity of a sailor.

Be assured, Gentlemen, that your kindness will never be forgotten, and that the cup you have presented to me will prove a new and a strong inducement to make myself useful in my humble sphere of life.

VI.—ON THE BIJOOGA INDIANS,

By an Officer of His Majesty's Ship Ætna.

THE Bijoogas are a small group of islands situated on the western coast of Africa, near the mouth of the Rio Grande, about 150 miles to the northward of Sierra Leone. Surrounded by extensive reefs, which render their approach very dangerous to ships, and having little to offer in the way of trade, although possessing a luxuriance of vegetation seldom equalled, they have remained neglected by civilized nations, and the character of the people by whom they are inhabited is little calculated to invite strangers to their shores. A few years ago, an attempt was made to establish a settlement on one of the islands under the care of the late Captain Beaver, of the Royal Navy. The attempt, however, failed, notwithstanding the utmost exertions of this officer.

The little island of Cavallo (one of the group) lay at a short distance from us as we cast anchor, and the sails were scarcely furled when we observed seven large canoes, each containing from fifteen to thirty men, crossing from Kanyabac to Yomber. These islands belong to the group. Kanyabac is the largest of the three, but Orango is the principal island of the Bijoogas, and is about twenty miles in length. The people in the canoes were all armed with muskets and spears, and without noticing us, although they had to pass at no great distance from our vessel, they all landed on Yomber island. This was the first occasion on which we had seen them, one which did not leave any favourable impression on us, of their general character. It was soon found that they landed on Yomber for the purpose of hunting, and attending their rice fields, and that the island abounds with deer and goats.

Shortly afterwards a party was formed from our vessel to proceed to a village on the island of Kanyabac, situated about a mile from the water side. This village is the same which Captain Beaver visited for the purpose of redeeming Jalorem, the wife of one of his colonists, who had been captured by these people. We were not long in reaching the island, and by the time we had landed, the natives had collected in great numbers from all parts of the island, to witness our arrival. We had scarcely left our boat, when those who got nearest us immediately began to beg with much importunity for whatever pleased them about our persons. Our uniform buttons seemed to attract most attention; and tobacco, rum, muskets, and powder were most perseveringly demanded. We were not so ready to satisfy their wants as they were in making them; but as they appeared exceedingly anxious that we should see their village, we set off together in that direction.

The ground on each side of our road was well cleared for a considerable space; the only trees left standing were a few ancient pullam trees, surrounded by the wild cotton shrub, the knotted stems and tortuous roots of the former presenting a striking contrast to the latter. As we advanced, great numbers of the natives joined us; and by the time that we reached their village, we were surrounded by an immense crowd of them, men, women, and children, shouting, and rending the air with their deafening noise.

On our arrival, we were conducted into the presence of the *Baba*, (or chief man of the village,) and found him seated with his women, and several old men, on the ground in the palaver house, where, it appeared, they had assembled on purpose to receive us. He was tall, and had a venerable appearance, when compared with his people, and seemed to be a shrewd and intelligent old man, between sixty and seventy years of age. His dress consisted of a black hat made of felt, that had known better days; a piece of coarse cotton, by no means remarkable for cleanliness, and betraying signs of long servitude, was thrown loosely over his shoulders, and formed his only garment. The dress of the men by whom he was surrounded, consisted merely of a goat or deer's skin wrapped round the loins. Few of them possessed a hat, although they hold this article of covering much in estimation, and are surrounded by the materials for making it. They are tattooed on the breast and arms apparently all in the same style, which, being performed with much geometrical accuracy, gives them rather a pleasing and symmetrical appearance. There was nothing in the tattooing of the chiefs to distinguish them from the other natives.

The dress of the women is also simple, and consists of a very thick cincture of palm leaves, reduced to shreds passed round the loins. They are also tattooed on the breast and arms similar to the men. The hair of both sexes is cropped, and matted in a great variety of whimsical forms, according to the taste of the individual. It is profusely anointed with palm oil, which is also applied in large quantities to their bodies; but we did not observe any of the red ochre which Captain Beaver mentions, and therefore concluded that it was only used on occasions of war.

The palaver house was formed by a few posts placed vertically in the ground, and a thatch of palm leaves covering the space which they enclosed. In one part of it was a small wooden image, about a foot in height, rudely carved out of wood, resembling in some degree those of the New Zealanders. The natives did not appear to be very jealous of our approaching it, nor did they seem to treat it with respect, so that, whether it was an idol or not, we were unable to ascertain.

The principal object of our visit was to obtain a supply of live stock; and the articles which we had brought to exchange were now produced, and laid before the Baba in the palaver house. The business seemed to be going on very well for some time, and the old man significantly nodded assent to the exchange which was proposed, although he did not choose to comprehend our object till an hour had been passed in communicating it to him through an interpreter. Time, however, was of consequence, and it became necessary to bring our bartering to a conclusion, which soon discovered to us the real state of affairs. On a sudden, the chief pretended ignorance of all that had passed, and that he had entirely misunderstood our object. He persisted in requiring muskets and ammunition (arma y polvora) in exchange, and as these were things that we could not part with, disappointment was suddenly shewn in every countenance: the next moment the whole multitude became enraged, and from mild, though incessant solicitation, proceeded at once to violent importunity and outrage. " Arma y polvora!" was the general cry. Those of the natives who had disposed of fowls to us, demanded their return; while to recover our own articles which we had given them was impossible; others attempted to cut the buttons off our clothes—and a scene of riot and confusion quickly ensued. We were armed; but had we attempted more than to keep off the marauders, we should have soon been overpowered by their force and numbers: our only resource was to get to the water-side, where we should find our boats; and forming our little party into a compact body, we slowly retreated in a style so as to shew them we were ready for their attack—and soon regained the boats. We were closely followed by a great crowd of natives armed with spears and muskets; but the masterly manner in which this manœuvre was performed, and our deliberate coolness, only prevented them from attacking us. When we had made good about half our retreat, the natives suddenly stopped, apparently in obedience to the commands of the Baba, who, no doubt, apprehended danger from our vessel. To obtain supplies from them seemed a hopeless case; and we, therefore, left them, and shifted our anchorage to the eastern extremity of the island in a fine spacious bay. Near this bay is a large pond of fresh water, but at the time of our visit it was considered unfit for use, although soon after the rainy season it might be good.

The Captain determined on paying a visit to a village, distant about a mile from the bay, and went on shore for that purpose. His reception from the two chiefs, named Demiong and Antonio, was apparently cordial, and they readily promised to dispose of bullocks, which they engaged should be conducted to the beach on the following day. The time came—crowds of natives appeared—but no supplies; indeed, it was evident, that their only object was plunder. Several invitations were sent to the Captain by Demiong to visit him at the village; but, as treachery was evident from the silent and sullen manner of Antonio, he declined the honour intended for him.

On the following morning, the two chiefs, Demiong and Antonio, ventured to come on board in one of our boats; an event which we little expected. The person of Demiong is slender, and about the common height; he appeared to be between fifty and sixty years old. Antonio appeared about thirty or forty, is very stout and robust, and is distinguished by animal courage rather than intellect. The former is keen, subtle, perceptive, and deliberate; the latter ferocious and precipitate. Like other Indians, they were lost in amazement at all they saw; although, had they been a little enlightened they would have displayed more interest at things within the sphere of their comprehension. One object, however, attracted their particular attention, probably from their being aware of its practical utility. This was the armourer's forge, which was then in use; and they seemed to witness the operations of the blacksmith with evident satisfaction.

The moment they landed on the beach, they were surrounded by the natives, who appeared to be exceedingly anxious to know what they had seen on board our vessel. On a sudden, Antonio's countenance became clouded, and, shrugging his shoulders, he walked away from the rest; at the same time muttering something like threats, as he adjusted the cotton cloth which he wore round his person. We were at a loss for the reason of all this; but he quickly turned round, and gave us to understand, that as the whole island belonged to him, he should require a present for the wood and water we were taking. This was by no means an unreasonable demand, and, being complied with, the chief was satisfied.

One of our party being desirous of knowing the feeling of the natives of Kanyabac respecting the colony which had been attempted on the island under the management of Captain Beaver, took the opportunity of mentioning the name of this officer. No sooner had he done so, and spoke of Bulama, the island on which the colony was settled, than he was quickly comprehended by both the chiefs. Demiong immediately commenced in a strain of garrulity, for which he is remarkable, and related, as far as we could make out, how Capt. Beba (the manner in which they pronounce "Beaver") had purchased Bulama of the chiefs Belchore and Jalorem, as well as Niobama. The two former, he intimated to us, were dead; and as he pronounced the name of the latter, he cast a glance of ineffable contempt in the direction of the Rio Grande, signifying at the same time his displeasure that Niobama should have presumed to consider Bulama as his, and that Captain Beaver, having purchased it of the Kanyabacs, should have acknowledged a superior right of disposal in the kings of Biafra, by a second purchase of it from them. At this moment, Antonio, who had listened with impatience to the words of Demiong, unable longer to restrain his fury, hastily interrupted him. The scene which followed was grand, and highly illustrative of the savage character. With his left hand he grasped his right breast, and drew it up towards his mouth: his lips quivered; his eyes assumed an expression of the greatest horror; the whole features of his countenance became distorted into an expression of the most revengeful malignity, which it was impossible to behold without painful feelings. In an instant he started on his feet, and commenced reeling about in a kind of zigzag direction, gnashing his teeth, and uttering imprecations, which to us were unintelligible, although their meaning might be easily guessed. He had wandered about thus only a few moments, when he returned to the party with whom he had been squatted on the ground, and commenced priming his musket, at the same time making signs to the women and children to get out of the way. They had watched his actions narrowly, and, seeing that he was bent on mischief, they hastily obeyed him.

Things seemed now to be going to extremities; and Antonio, a prey to his passions, would, no doubt, have committed some desperate act, had he not been interrupted by his brother chief, Demiong, who thought it time to interfere. The cool and earnest manner in which this chief addressed him, made an immediate impression on Antonio; his kind and persuasive words completely overcame the infuriated man, and, from the state of dreadful excitement to which he had worked himself, his mind gradually returned to its accustomed tone. The coolness with which we had watched his proceedings, might not have been without its good effect; but even after he had become quite composed, he could not look on the person who had made the inquiry respecting Captain Beaver, without betraying emotion. We still were at a loss to account for this behaviour, till one of the natives, watching when he was apart from the rest, told him that Captain Beaver had killed one of his relations, and asked him what he had to say concerning him. The whole matter was at once explained—the inquirer had been regarded as a relative of Captain Beaver; and, as blood for blood is their custom, he had well nigh paid dearly for his curiosity.

There is much difficulty in accounting for this display of Antonio, for no one was more cautious, or less inclined to injure these people, than Captain Beaver. It may be recollected that Demiong and Jamber, another chief, once visited Captain Beaver with a large armed party. The musket of one of them accidentally went off, and the contents lodged in the foot of one of the natives. An attack (as it was soon after discovered) having been meditated, this occurrence was considered as a bad omen, and the whole party immediately decamped. Nor did they ever visit Captain Beaver again, as they looked on all the white men as "witch." But it is more than probable, that the Portuguese at Bissao, who had shewn themselves to be inveterate enemies to the colony, had taken care to produce jealousy among the natives. Therefore, it is by no means unlikely, considering the ignorance and credulity of these people, that they had imputed the blame to Captain Beaver, of some quarrel in which the friend of Antonio had been killed. There is no doubt that Captain Beaver had acquired a good name among the surrounding tribes, and had removed in a great measure the unfavourable impression towards white men generally; but with regard to the Bijoogas, they will still be found as treacherous and dangerous as ever, and the re-establishment of a similar colony would be attended with as much opposition as the former. It was evident that these people only required the opportunity, to murder the whole colony; and it is equally so, that they are very tenacious of the interference of the kings of Biafra: but a colony differently organized, and well supported with resources, might succeed.

(To be concluded.)

VII.—ADMIRALTY COURT DECISIONS. No. III.

COURT OF VICE-ADMIRALTY.—PROVINCE OF LOWER CANADA.

THE BARQUE FLORA—*Wilson.*—27*th Oct.* 1832.

JUDGE KERR.—This is a claim of salvage preferred by the chief and second mates, together with the carpenter of the Barque Flora, stranded on the island of Anticosti.

It appears from the evidence, that on Wednesday, the 22d of August last, the weather being thick and foggy, and the light-house on the island not discernible, the Flora, on her homeward voyage, ran aground about fifteen miles from that station; that William Wilson, the master of the Flora, the following morning, after observing to the crew that the ship's articles were at an end, and that they must look out for themselves, went on shore, and did not return to the ship till the next day; that after remaining a short time on board, he again went on shore, and in seven or eight days afterwards he came back, with the master of the light-house.

Captain Wilson, whether from sickness or other cause does not appear, seems not to have taken any active part in the saving of the articles, out of the proceeds of which these individuals claim a recompense, but to have entirely left to Mr. Carr, the first mate, to assume the conduct of the enterprise; and by Carr's direction, and through his exertions, and those of the crew, the ship was dismantled, and a great part of the sails, cables, rigging, and other articles, were brought on shore. The captain went over to Gaspé, and having hired a schooner, he returned to the island, and the goods being shipped on board the schooner, they were brought to Quebec. By the consent of parties, the articles have been sold by a private auctioneer, and from the account of sales, rendered on oath, the whole yielded the sum £383. 1s. 4d. currency, out of which were paid £80. for freight from Anticosti. Thus, therefore, the gross proceeds, when safely brought to a market, are ascertained to be £303. 1s. 4d. out of which the court is called upon to award salvage to the three petitioners.

If the whole proceeding had originated in this court, I could not have had much difficulty in apportioning what share of this £303. 1s. 4d. ought, under all the circumstances of this case, to be awarded as a recompense to the petitioners, and their co-salvors. I am free to confess, that there does not enter into their case that ingredient which entitles them to the highest salvage, *i. e.* a moiety.

There was no risk of life attending the saving of the goods, the vessel being only a mile from the shore; but it must be remembered that they were employed for seventeen days in an arduous duty, performed too when they were up to their breasts in water. In respect to the chief mate, I think he has laid before the court a case of great merit.

Before pronouncing any opinion as to the quantum of recompense which, in the exercise of a sound discretion, ought to be awarded to these three petitioners, I cannot but express my disapprobation of the rule adopted here, as sworn to by Mr. Campbell, the King's Notary, by which he is directed to distribute reward for salvage according to rank and not to merit, and of doling out salvage with a sparing and niggardly hand. Whatever may have been the usage and custom at this port, or the rule of municipal law in such matters, Courts of Admiralty in all countries are moved by considerations far different from those which appear to have influenced the minds of persons here, who have decided upon claims of this nature. With more extended views they take into consideration how much the general interests of navigation and commerce are protected by exertions of this nature. The fatigue, the anxiety, the determination to encounter danger if necessary, the spirit of adventure, the skill and dexterity which are acquired by the exercise of that spirit, as Lord Stowell eloquently expresses himself, all enter into their minds. It never occurs to these courts, that in this or in that case, in awarding liberal salvage, it will not do justice to the underwriters if more be awarded than is asked by the petitioners, as appears to be the language of those who are adverse to the claims of these salvors. But their judgments are rendered on more enlightened views, and they consider that if small rewards are held forth, the spirit of adventure would be repressed, and that in an unlimited series of disasters to which ships and goods are exposed, the underwriters themselves would find that they were losers. The maxim which Terence puts into the mouth of one of his Dramatis personæ has its application here, *Interdum pecuniam negligere magnum est lucrum.*

An objection has been made to the claims of these petitioners, founded on the impolicy of granting rewards for saving goods, to the seamen of the wreck. It is said, that if such a principle were admitted, it would hold out an encouragement to seamen to run their ships on shore, in the expectation of being liberally rewarded out of the proceeds of the goods saved from the ship. But the best guarantee against such criminal acts is the certain loss of wages, and that, in the investigation of their claims for salvage, a discovery might be made which would affect their lives. However, this is not a mere speculative question, for I consider it as a settled question of jurisprudence. In the prize side of the Admiralty many cases occur where large sums are granted to the seamen belonging to the ships taken by the crew, though it might be apprehended that this would hold out an encouragement to seamen to navigate their ships where there was a probability of meeting with an enemy. Serjeant Marshall in his Insurance lays down the law on this subject thus:

"As to the sailors,—when a misfortune happens, they are bound to save "and preserve the merchandise to the best of their power; and while they "are so employed, they are entitled to wages, so far, at least, as what is saved "will allow: but if they refuse to assist in this, they shall have neither wages "nor reward. In this, the Rhodian law, and the laws of Oleron, of Wisby, "and of the Hanse Towns, all agree."

In the decisions of the United States, we find that this principle has been recognized, and Judge Peters thus expresses himself in the case of the Cato.

"The third article of the laws of Oleron has been produced, together with "the commentaries upon it, to shew that seamen saving from wreck, are entititled to reward (where sufficient property is saved) beyond the amount of "wages."

"I never disputed this doctrine in the cases to which it seemed applicable. "Seamen are entitled or not to *wages*, in cases of wreck, according to the "merit of their services in that distressing exigency. Those who do not assist, "do not receive their wages, which are lost by the *wreck*, and recovered in "equivalent by the services in saving."

On the whole, I am of opinion, that considering the meritorious services of the chief mate, he is entitled to £27. currency, and that to each of the other petitioners the sum of £12. 10s. should be allowed. These sums, together with the £52. will make up nearly an aliquot part of one-third of the gross proceeds arising from the sale of the articles saved from the wreck of the Flora, and I decree these several sums to be paid to the petitioners, with costs.

VIII.—Whale Fishery.

The following case, lately decided, although not in an Admiralty Court, concerns our Nautical readers so nearly, that we insert it entire.

Cooper and others v. Hutchinson and others.

Mr. Pollock (with whom was Mr. Follett) stated, that this was an action brought to recover the amount of the proceeds of a considerable quantity of whale blubber and whale fins belonging to the plaintiffs, which the defendants had taken possession of, and converted to their own use. The value in money was about £500.

The plaintiffs were owners of the ship William, of Hull, which, in the year 1830, was employed in the Davis' Straits Whale Fishery, and the defendants were owners of the ship Traveller, of Peterhead, which was engaged in the same fishery, and at the same time. The ship William, after having been very successful in catching fish till the 2d of July, got entangled among the ice, and became a wreck, and was abandoned by the crew, who distributed themselves among the other whaling ships. The crew of the ship Traveller, however, took about 70 butts of blubber, and a considerable quantity of whale fins, out of the wreck, and brought them to this country, and sold them, and converted the proceeds to their own use, and refused to account for them to the plaintiffs. The facts of the case lay in a short compass, and would be clearly proved; and, he believed, there was no dispute about any of them except one, and that was, whether, by the custom of the Northern Whale Fishery, the defendants, on finding the property in the situation mentioned, were entitled to convert it to their own use? Now, in the first place, he denied that there was such a custom in fact, and he had some evidence to offer on that point. But suppose they should succeed, on the other side, in proving that there was such a custom; then he would maintain, that, in point of law, such a custom could not be sustained. The Cornish wreckers, the Mediterranean pirates, and the London thieves might as well plead custom in defence of their respective avocations. But there was no custom in the whale fishery as to this point, unless such as might be set up to justify the taking of a cask found floating in the middle of the Atlantic or Pacific, and converting the contents, whether wine, spirits, or beef, &c. to the use of the crew who took it. But suppose the cask were marked in such a way that the ownership of the article could be clearly ascertained, could it be contended, with any chance of success, that the ownership was changed by the conversion? He would submit to his lordship, that it could not.

The depositions of several witnesses examined on interrogatories, were then read, proving the facts, and some of them stating that they were acquainted with the whale fishery, and that there was no custom to entitle the defendants to keep this property. The following witnesses were examined *viva voce*:—

Alexander Webster, whale ship-master, of Hull, stated, that instances had occurred to his knowledge, in which goods and stores had been taken in this way from wrecked vessels, and the proceeds were accounted for to the owners, reserving only the salvage.

John Egginson was also acquainted with the whale fishery, and knew that property taken in this way had been accounted for, and the salvage only retained; this took place in all the instances within his knowledge, except one, and that was in the case of the Duke of Wellington, the owners of which refused to account; and the property was so small, that it was not worth while to go to law about it.

Henry Hare, clerk to Mr. John Flint, of Hull, stated, that Flint was the owner of a whale ship, which took some property out of a wrecked whaler, called the Lady Jane, and the property was claimed by the owners of the Lady Jane, or their underwriters, and was accounted for; the property in that case consisted of ship lines, which sold for £30.

This was the case for the plaintiffs.

Sir James Scarlett, for the defendants, observed, that if the plaintiffs' Counsel had been confident that the custom of retaining the property found under such circumstances was bad in point of law, they would probably have closed their case without attempting to impugn the fact that there was such a custom. But they did attempt to impeach the custom, and had succeeded only in shewing that there had been some insignificant variations and exceptions. It only remained for him to shew, that there was a custom by which property found under such circumstances, as appeared in this case, became the property of the finder, and that that custom had received the sanction of Courts of Justice in more than one instance. The custom had prevailed as far back as could be remembered, and although many acts of parliament had passed for the regulation of the whale fishery, no attempt was ever made in any one of them to impeach or to alter this custom. There were strong reasons for such a custom:—the great difficulties and danger attending the recovery of such property—the importance of holding out the strongest inducement to afford relief to the crews of vessels wrecked under such circumstances—the extreme difficulty of ascertaining the proper amount of salvage, &c. As to the law of the case, the learned counsel made several observations on the law of *jetsam* and *flotsam*, and contended that the custom was perfectly legal. He understood, however, that the Hull owners had combined to alter the custom, and they might do so if they pleased, so far as concerned their own port; but he represented the owners of a Scotch ship, and in Scotland the custom had not been disputed. In Holland they had specific laws for the regulation of these matters; but in this country they had no specific law on the subject, and therefore the custom was the law.

The depositions of various witnesses examined on interrogatories, who represented themselves as well acquainted with the Davis' Straits and Greenland Fishery, were read, and these spoke decidedly to the custom, that property recovered under such circumstances became the property of the finder. When a ship was abandoned on the fishing ground, the finder was entitled to take out of her whatever he pleased, without being liable to account for it, and the custom was generally known and assented to, and extended both to ship and cargo; but the custom was confined to the fishing station. These depositions were made chiefly by masters and owners of whale ships belonging to Aberdeen, Peterhead, Dundee, and other Scotch ports, and the amount of their evidence was, that by the custom, when a ship was wrecked on the fishing station, the property of the owners in her entirely ceased, and that both ship and cargo became the property of the finder.

The following witnesses were examined *viva voce:*

George Simpson was master of the ship Traveller at the time when the

William was lost, on the 2d of July, 1830; they were within fifty yards of her when she was wrecked. She was jammed between the ice, and soon filled with water, and the crew abandoned her. The William was soon covered by a field of ice. The Traveller was also enclosed by the ice, but cut a dock in it, in which they remained for seven days, and then got loose. The Zephyr, of Hull, was near at the time, and the crews of the Traveller and the Zephyr then set about clearing away the ice from the William, and succeeded after forty-eight hours' labour. They afterwards set fire to, and burnt, the upper part of the ship, by which means the vessel was lightened, and rose; and when the beams above the blubber-casks appeared, they set fire to them also; and when the casks appeared, they *drowned* out the fire. The crew of the Zephyr insisted that what blubber could be got by them from the wreck should be on their own account, and not on account of the owners of the wreck; but the master refused to agree to this, or sign an agreement to that effect, and consequently none of the blubber was taken by the Zephyr. The witness then took all that he could, being about 70 butts of blubber, and a ton and a half of whale fins, on account of his owners. The custom in the Davis' Straits and Greenland Whale Fishery was, that whatever could be got from vessels wrecked and abandoned on the fishing station, belonged to the finder.

Captain Wareham, of whale ships belonging to Newcastle-on-Tyne, who had been engaged for twenty-one years in the Davis' Straits Fishery, gave the same account of the custom, and mentioned several instances in which property had been taken out of wrecks, in which no account of it was given to the owners of the wrecks, and no claim was made by them.

Captain Cluff and Captain George Palmer, of Newcastle, whalers, gave the same account of the custom, and mentioned instances; and the latter mentioned an instance in which a vessel belonging to the present plaintiffs had taken blubber out of a wreck.

Cross-examined—The general practice in insuring whale ships was to insure the vessel and the outfit; but not to insure the fish.

Captain Thomas Phillips of Hull lost his ship, the Resolution, in the Straits, in the same year in which the William was lost, and his stores were taken by other ships. He gave the same account of the custom.

Captain Ainsley, of a London whaler, spoke to the same custom, and had himself taken boats and stores from wrecked ships. It would not be worth while to take blubber under such circumstances, if the takers were only to have salvage for it.

Captain Ephraim Turpin had sailed as a master of whale ships from London, Hull, and Whitby, and always picked up whatever he could from vessels wrecked and abandoned on the fishing station, and never accounted for it, and mentioned several instances. It would by no means be worth while to fish blubber out of a wreck, if the taker could only recover salvage.

The Rev. Mr. Scoresby stated, that his father was extensively engaged in the whale fishery; and he himself, before he entered the church, had, for twenty-one years, with an interval of two years, been engaged in the whale-fishery, and had commanded a vessel in thirteen voyages: he had heard the account given of the custom, and concurred in it. An abandoned wreck in such circumstances had, by the usage, been considered as a loose fish, which the first finder might appropriate. The Dutch had a specific law on the subject, which he had explained in a book that he had published on the Whale-fishery.

Sir J. Scarlett—And which it would be very desirable that you should republish.

Lord Chief Justice—How long have you left the whale-fishery?

Witness—Nine years.

Lord Chief Justice—Have you ever known Dutch whaling-ships act on their own law?

Witness—I was not aware that there was any law in Holland on the subject, until I was preparing that book for publication; and having then heard of it, I wrote to Holland, and got a particular account of it, which I published.

Mr. Pollock, in commenting on this evidence, strongly vituperated this barbarous practice of plundering ships; but maintained that it was not so ancient or so general as to have the force of a custom. A custom, to be good, must be unvarying. If a flaw could be found in it, it was gone; and here it had been proved that the custom had been sometimes questioned.

The Lord Chief Justice Denman observed to the jury, that this was an action of detinue, with counts in debt, and that the plaintiffs had unquestionably a right to receive, unless the jury should be of opinion that the custom set up, on the part of the defendants, was clearly proved. According to the common legal notion of a custom, in order to be good, it ought to be proved to have existed from time immemorial; but that rule was not to be strictly applied to such a custom as this. There certainly was a great mass of evidence, written and verbal, in support of the custom; and there was also evidence that the custom had in certain recent instances been questioned. He would not read the evidence in the voluminous mass of the depositions, unless the counsel on either side desired it, but he would read the evidence which they had heard *viva voce*, and which went to the whole question in dispute. His lordship then recapitulated the evidence, and observed, that it was to be regretted that the alleged custom was not set out on the record, in order that the question of law might undergo the more solemn consideration of the courts, in case the jury should be of opinion that the custom existed in fact. It did not appear in evidence that the custom was recognized by foreign nations, and that was a point for the consideration of the jury. It had been said that wrecks in these situations were like loose fish, which any one who could might take. But he thought, that the case of fish which had got loose after being struck, was different from that of the wreck of a ship, which was, as it were, ear-marked. It was for the jury, however, to say, on the whole of the evidence, whether the custom was proved to be existing in point of fact; and if they were of opinion that the existence of the custom was not sufficiently proved in point of fact, then they would say, as well as they could ascertain it, what amount the plaintiffs were entitled to recover, deducting the amount of salvage which they might think the defendants entitled to retain.

The jury retired, and, after being absent for about half an hour, returned with a verdict for the plaintiffs—Damages, three hundred and ninety-two pounds.

IX.—A SAILOR'S ADVICE TO HIS SON,* ON ENTERING THE ROYAL NAVY.

(Continued from page 39.)

LETTER V.—*Demeanour in general:—Captain—Officers—Messmates—Seamen.*

It will be the first object of whoever accompanies you to your ship, to introduce you to your captain. To his protection you must consider yourself transferred, as to a second father; and so long as you continue to deserve it, I sincerely hope it will be kindly extended to you. You will perceive that he is looked up to as the head of all around him. You will see officers of long experience and high reputation, who have faithfully served their country many years, punctually obeying him, and executing his orders with alacrity; and you will find them constantly observing, with respectful deference and attention, whatever he may think necessary to direct for the benefit of the public service. It will therefore be evident to you, that, as a little boy who has every thing to learn, you must also study to respect and obey him implicitly, not from a desire to ingratiate yourself, or to court his peculiar favour, but because it is your duty to obey him, in order to support that station, the obligations of which it will be incumbent on you to fulfil. At the same time, justly to deserve his approbation by your merit and general good conduct, will be a sure satisfaction to yourself, and may, by securing his esteem, considerably promote your future advancement in life. With the lieutenants and officers of their mess, your intercourse, both of duty and society, will be more immediate. From the former, especially the first lieutenant, you will derive all the advantages and indulgences which you may deserve. He is the official organ of the captain's orders; the authorized executive channel through which every regulation flows; the watchful observer of all around him; the rewarder of merit; the corrector of negligence, disobedience, and depravity; the friend of the good; and the terror of the iniquitous. From the first lieutenant you will continually receive orders, perhaps frequently delivered in a hurried and inarticulate way, but you must accustom yourself to catch the meaning from the usual manner of the lieutenant in similar cases, and to comprehend them without repetition; and should it be necessary to request explanation, do it promptly and respectfully: never exhibit the slightest symptom of indifference, petulance, or carelessness in the execution of your duty; if you do, the unfavourable opinion of your superiors will assuredly follow.

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* At the age of thirteen.

With your companions always maintain a frank, cheerful, and independent openness of demeanour. Avoid carefully every description of cabal, party, wrangling, idleness, intoxication, immorality, or profaneness. Without improper familiarity, be affable, courteous, and disposed to do kind offices to them all; but never engage yourself to any assistance of moment, either of a pecuniary or any other nature, without first considering whether you possess the means of fulfilling it, and, if you do, whether you do right in using them or not. Never enter into any conversation, reflecting on your superiors. Such conversation (independent of its rendering you, by the articles of war, liable to suffer death) is both unprofitable and dangerous, calculated to produce dissatisfaction, to sour the best of tempers, and to substitute discontent and mischief in the place of harmony and cordiality. Should you ever be accidentally present at the discussion of such topics, if it be possible, immediately withdraw; or, if you cannot absent yourself, nor conscientiously defend your superiors, *be silent.*

To the seamen, the only class subordinate to you, appropriate behaviour requires to be very particularly enjoined. From your superiors, you will meet with the tone of manner which restrains and governs you, but with inferiors you must stand upon some degree of self-importance.

In the first place, you must consider that you are only a little boy, having every thing to learn—for a time merely repeating orders, the meaning of which you scarcely comprehend. You must also remember that many of the hardy veterans, to whom you may be directed to address yourself, have served their country in battles and in tempests for several successive years; and that a true British seaman, of unblemished conduct, though undecorated by external marks of rank, is in reality one of the most valuable characters belonging to your country. He bears with patience and cheerfulness, peril, privation, and hardship, at which the luxurious landsman would shudder with dismay. Amid perpetual watching, disease, and danger, toil, hunger, and thirst, alike to him are the midnight surges of a leeward coast, or the playful ripple of the gentle gale. His duty is his sole delight. Patient, orderly, and submissive, he braves the fury of the raging storm, and dares the boldest efforts of his country's foe. His swarthy cheek and hollow eye, indicate exposure to every clime, and his weather-beaten frame at length yields to their effects. He sinks into oblivion, unknown to that country which he has dearly aided to defend. He is committed to the deep, and unfathomable waters are his tomb! but his merits are recorded elsewhere. Never then approach such a person without recollecting what is due to him. Whatever orders you have to give to him, repeat them in an affable, condescending tone. In his turn, he will esteem and respect you; he will feel both pride and pleasure in teaching you how to knot and splice, and in giving you all the information he can on the various parts of the rigging. But, whilst you are receiving this return, you must never forget that you belong to the quarter-deck, and take care that you never descend to, nor allow, the smallest undue familiarity.

I wish you to habituate yourself to regard the seamen as humble and dependent friends, by their situation excluded from all the advantages of knowledge and education which you possess, but who, in the moment of danger, are the foremost to rush forward amidst the havoc of artillery, or the peril of shipwreck; and, for a good officer, will expose themselves to protect his person, to shield his honour, and to exalt his name in the records of his country's glory. Nor must you be led away with an idea that they are universally men of extravagant or dissolute habits. You will find many of them discerning, temperate, and sagacious, uniformly regular and exemplary in their conduct, and who, as far as their information permits, would scorn to transgress their duty in a moral or a religious sense, with as much firmness as the most high-minded and well-informed officer; while many instances of their filial piety in allotting a considerable part of their pay to their parents, will give you a high opinion of their generosity and regard to natural affection. Never then address them with contumelious epithets, nor in any way abuse your authority over them. True it may be, that the foregoing is the brighter side of their character. They have naturally many imperfections, but these are a pledge between every honourable officer and his country, that he will govern them with care and protecting humanity,—that he will afford them the constant guidance of his superior intelligence and example, and that he will never exercise the sterner authorities of discipline but with undeviating regard to justice and to mercy. It is his duty to feel for and to supply the deficiencies of his men, and to recollect that many of their faults and their failings are the inevitable result of ignorance and long habit; and to consider, if their prejudices be not in any material instances derogatory to the good of the service, that they should meet with a benevolent toleration; although, at the same time, every real encroachment of disrespect or disobedience should be visited with prompt correction.

In fine, to all classes endeavour to maintain a demeanour full of mildness, suavity, and conciliation, and you will be beloved and respected. You will be obeyed from affection and confidence, and in trying moments you will feel a security of command which will triumph over apparently insurmountable difficulties. By avoiding harsh, passionate, and flippant behaviour, you will ensure the respect of superiors, equals, and inferiors, besides the tranquil approbation of your own mind. A ready confidence in your own powers will in due time develop itself; and when you attain the rank of captain, be communicative to all under you; and, should opportunity arrive, you will go into battle with a superior foe, so serene, so firm, and so collected, that you cannot fail to obtain as much honour and distinction as can be reasonably aspired to by the most ardent mind.

(To be continued.)

WORKS OF NAUTICAL AND GEOGRAPHICAL SCIENCE AND ART.

CHARTS.

IRELAND, SHEET 2. East from Lough Carlingford to Lough Larne, by Com. W. Mudge, R.N., F.R. A.S. Admiralty.

> This chart, which we have previously noticed, contains the important addition of Lough Strangford. The narrow strait or entrance to the lough is also given on an extended scale, with the leading marks for sailing in. As a local feature, this is peculiarly desirable.

CARLINGFORD LOUGH adjusted to the Trigonometrical points, furnished by Lieut.-Colonel Colby, R.E., by Commander W. W. Mudge and Lieut. G. A. Frazer, R.N. 1831.

> A very neat little plan, shewing the whole navigation of the Lough, on the scale of a mile to an inch and a half. The velocity of the tides on the bar we see inserted at 5½, and neaps 3½ miles per hour.

PROPOSED HARBOUR AT REDCAR.—Report on the formation of an Asylum Harbour at Redcar, on the South Side of the Tees Bay. By W. A. Brooks, C. E. 1832.

> There is a prominent feature on the face of this plan, so favourable to the construction of a harbour, that we are rather surprised it has not been formed long ago. Mr. Brooks, however, has at length pointed out, that nature has already done half the work necessary for its construction in leaving two parallel ridges of rocks, called the Salt Scar, that extend out 8,000 feet into the sea, at the distance of 2,500 feet apart from each other, and including between them a sufficient depth of water. By the addition of piers on these rocks, which he proposes to be carried out a short distance further in the same direction, Mr. Brooks obtains an area of 435 acres, which would contain several hundred sail of merchantmen, or a fleet of about 30 line-of-battle ships, with a depth, at low water, of 30 feet.
>
> We have always been favourably inclined towards these bold and spirited measures of supplying protection for our numerous shipping, which nature has denied us; and it is with much satisfaction that we find the plan for an asylum harbour at Redcar appears with all these recommendations, besides that of an easy access at all times of tide. The barrenness of our eastern coast in harbours, has already given rise to several undertakings of this nature, but we do not know one more worthy of being established, on the grounds of its importance to the

nation at large, than that at Redcar. The protection which it would afford to our numerous mercantile shipping passing the east coast in case of bad weather, is a sufficient recommendation; but there is another light in which it must be considered—as a naval station, in the event of a future war with the other European powers, the benefits of it to the nation at large would be incalculable. Instead of being exposed in the open anchorage of Hollesly bay, the common rendezvous of our North-sea fleet in former days, where continued gales of wind prevented any communication with the shore, and were accompanied by all their usual disasters affecting the whole economy of our men-of-war; in the projected asylum harbour at Redcar, they would lie in ample security, and be enabled to put to sea, and return to the harbour with the utmost facility.

That a project of this nature has been long since entertained by government, appears from the report of Mr. R. Dodd, in 1795, on the improvements, both civil and military, of which the haven of Hartlepool was then capable. Mr. Dodd's report is rather a curious production; and all that he mentions in favour of Hartlepool, is also to be found at Redcar, with the important addition of a sufficient depth of water already afforded by nature. At Hartlepool the depth has to be made at an expense of some hundred thousand pounds, while at Redcar it is already accomplished. But Hartlepool was once an important harbour. The tonnage of our merchant vessels was then small. As soon as they increased in size, Hartlepool was no longer of any use, from its not possessing a sufficient depth of water; and the only reason, that we can find, that the measures were not adopted for increasing that depth, and converting it into the naval station, which was so much desired, arose from the same deficiency of depth in the whole bay.

Mr. Brooks has calculated, that the stone may be quarried and delivered, including all the expense of conveyance, at 1s. 6d. per ton, at Redcar; while at Dunleary harbour, with no other recommendation than its proximity to Dublin, it did not cost less than 2s. 6d.; and if we look to Plymouth breakwater, we shall find that it cost 7s. 6d. per ton. The nature of the stone at Redcar also renders it capable of being worked with greater facility than at either of those places; and as a small six-horse power-engine can easily work 1,000 tons per day, from the quarries to the proposed harbour, eight of the same engines would be adequate to convey sufficient stone to form the harbour, in the course of twelve months. In addition to these advantages, which are certainly greater than nature granted to any harbour which has been completed, or is in course of construction, on the whole of our eastern coast; the facilities afforded for the construction of docks at Redcar, and the immediate vicinity of an ample supply of stone for the projected piers, are important recommendations.

The supply of good water is abundant; and, looking on Redcar with respect to its becoming a naval station, the abundance of coal and iron in its neighbourhood would facilitate the establishment of a cannon foundry, at 30 per cent. cheaper than the other naval stations. There can be no doubt that these advantages in favour of so desirable a harbour as might be formed at Redcar, cannot be long overlooked. In four years the whole works would be completed; but the advantages of them in the safety of shipping, would be found long before that time would arrive.

We shall extract from the report of Mr. Brooks what he considers are the principal points in favour of his plan. These are,

"1st. Depth of water, and space within the harbour sufficient for a fleet of line-of-battle ships, besides numerous smaller-classed vessels; or, as an asylum harbour, it will be able to contain several hundred sail of merchantmen, its area being at high water 435 acres, of which 313 are available at low water.

"2ndly. Depth of water outside so ample, that the harbour may be be safely taken by a ship of the line at low water, spring tides, in a gale of wind.

"3dly. Good mooring ground; the bottom of the valley, between the long ranges of alum shale rock, which form the natural north and south boundaries of the harbour, consisting of blue clay."

It will be seen by referring to the annexed sketch that the principal and most expensive part of the work has been already done by nature.

There is yet another point to be considered, which is important, and has proved fatal to undertakings of this kind. We allude to the deposit which is continually taking place; and the answer of Mr. Brooks to this particular is so clear and satisfactory, that we shall give it in his own words. He replies, "that the experiment has been already tried by nature, by the enclosure of the north and south sides of the harbour by the Salt Scar and East Scar rocks, within which it has been ascertained, by comparison with positions at equal distances from the shore where the tidal currents are unobstructed, that no diminution of depth has occurred, and the evidence of all the most experienced sea-faring persons on the spot is decidedly to the effect that no alteration has ever taken place in the depth within their memory. It may also be reasonably inferred, that the formation of the eastern breakwater will be an additional guarantee of the maintenance of the present depth within it of 30 feet at low water."

In addition to which, the great source of deposit near Redcar would be from the river Tees, from which the projected harbour would be entirely clear, as the ebb-tide would carry it away to the northward.

There can be no doubt, that were the harbour established on the small scale as shewn by the dotted line in the annexed plan, that it would soon become an outlet for the increasing trade of the Tees; and that, in fact, the impetus gained to the trade of the surrounding parts would soon be the means of extending it still further. The estimate for the small harbour amounts to £283,765; and for the large one, considering it as a naval station, £466,860, to be raised by a duty of one farthing per ton on passing vessels, and of three pence per ton on vessels entering it for the purpose of commerce or refuge. It is rather remarkable, that these rocks, which Mr. Brooks proposes to convert into so desirable a purpose, are the dread of vessels embayed on the coast, and that Captain Hewett, in surveying this part, contemplated the erection of a beacon, to guide vessels where to take the shore, when they could not avoid being wrecked.

In addition to what we have advanced in favour of this harbour, we will close our remarks with the following statement.

"On the 12th October, 1824, a gale commenced from the east-south-east, which afterwards got round to the east-north-east; the result was, that 113 sail of vessels were wrecked or driven on shore between Scarborough and the Tyne; of this number, 37 went ashore in the

> Tees bay. Had a harbour at Redcar then been formed, the whole of that large fleet could easily have found refuge in it."

More than this, we think, cannot be said in favour of adopting Mr. Brooks's admirable plan.

INVENTIONS, ETC.

Paddles of Steam-Boats protected from Injury.—Captain F. R. Chesney, of the Royal Artillery, who has lately returned from an interesting journey on the Euphrates, has proposed a method of protecting the paddles of steam-vessels from external injury by shot or otherwise. In his descent of the Euphrates, the attention of Captain Chesney was directed to the navigation of that river by means of steam-vessels. The free passage of it is much molested by the Arabs, and is also rendered somewhat difficult in several parts, through channels which become narrow when the river is low; and in order to obviate these difficulties, and effectually to protect the paddles of a vessel from the shots of the Arabs, or concussion against the rocks, Captain Chesney proposes the following simple method:

He divides the vessel longitudinally, or in the direction of the keel, into three parts, between which he places his paddles; the engine, boiler, &c. of course being in the middle one. The two outer parts are secured to the principal or middle one by diagonal cross-beams on the upper deck, and by the shaft of the paddles below, leaving a space equal to their breadth between them for the free passage of the water fore and aft the vessel.

It is evident that such a vessel can only be made use of in smooth water, and that also by means of steam alone, where the propelling power is in the direction of the line of motion. A vessel so constructed gains stability, but is altogether, from a want of connexion throughout, unfit to resist the pressure of sails. Experience alone will prove how far the plan may succeed; we believe it to be entirely new; and, under the circumstances for which Captain Chesney has designed it, we see no particular reason why it should not answer his purpose. The length of the vessel on deck he proposes should be about fifty-two feet, and sixteen feet six inches beam, and considers that her draught of water would be 18 or 20 inches. Experience again will set all this right; but in the mean time Captain Chesney's plans deserve every encouragement, on account of their ingenuity, and the importance of the subject which has suggested them, namely, a speedy communication with India. This method of securing the paddles was first designed by Captain Chesney in the summer of 1831, and is about to be printed, with his description of the Euphrates.

The Tropidoclinometer.—This is an instrument for measuring the inclination of the keel of a ship from the horizontal position, with a view to ascertain whether she is by the head or the stern. It is the very ingenious invention of Captain L. de Coninck, the Danish officer whose signal lanterns we alluded to in our last number. The trim of a ship involves so many important considerations, that the means of ascertaining a knowledge of it at all times, when practicable, cannot be too highly appreciated. It is a point which must not be classed among those that have received so much attention of late, and yet it is one on which the safety of a ship might depend. To know the trim in which his ship sails best under different actions of the sails, is among the first duties of a commander, and how to trim her accordingly is a part of that duty. The means of ascertaining the inclination of the keel from the horizontal position, we believe, has not before this appeared. The slightest variations in the angle are important, as they produce considerable changes in the surface of the immersed body. Mr. Perkins' orthometer failed in this particular, and left the field open.

The means by which Captain de Coninck has succeeded in measuring a change of trim under sail to an inch in a ship's draft of water, consists in a series of glass tubes filled with mercury, to which he has also happily applied a column of spirits. The instrument is placed on the deck of the ship, and the height of the spirit column indicates at once the angle of inclination, from which the difference by the head or stern is immediately ascertained. If the vessel be at anchor, the instrument will measure this difference exactly. We consider this invention as calculated to be of material assistance to our naval constructors, whose general complaint is a want of attention to this particular in the persons who have the command of their ships.

HYDROMETER.—M. Laignel has invented a new instrument intended to measure exactly the velocity of a ship under sail; also that of the wind, and more particularly that of running water. M. Laignel asserts, that by means of this instrument he has disproved, that in a stream the greatest velocity of the water would be at the surface, and that from thence a progressive diminution would take place towards the bottom. According to him, the velocity is greatest below the surface, and nearly half-way between it and the bottom.

M. M. Prony, Girard, and Navier, are directed to examine the instrument, and report on it to the Academy at Paris.

NAVAL TACTICS.—M. Letourneur has presented the Academy of Sciences at Paris with an Essay on the theory of manœuvering ships of war.

BARON ROUSSIN, Vice-Admiral of the French Royal Navy, has been appointed Ambassador at Constantinople. In taking leave of the Academy at Paris, the Baron expressed his desire to promote the interests of science in his new situation; and from a recollection of his valuable charts of the coast of Brazil we, have no doubt that much benefit in this particular will be derived from the appointment.

PRIZE CHRONOMETERS.—In page 525 of our first volume will be found a statement of the chronometers that have gained prizes in the annual trials at the Royal Observatory, with their trial-numbers,* and extreme variations of rate. In the tenth trial, that of last year, an error has inadvertently been made in the statement of the extreme variations, which we are anxious to correct. They should stand as follows:

Mr. Molyneux.	No. 1038	Tr. No. 2,82	Ex. Var. 0,67
Mr. Young...	No. 110	——— 2,97	——— 0,82
Mr. Webster..	No. 695	——— 3,09	——— 0,86

VARIATION CHARTS.—Having long since explained the effects of local attraction on the compass, arising from the various substances on board of a ship, and pointed out the means of remedying them, Professor Barlow is now engaged in constructing a variation chart, on which will be shewn the present magnetic curves in various parts of the world. Since the publication of Mr. Yates' chart in 1817, we believe this interesting subject has been taken up only by Professor Hanstein, who has devoted much attention to it. There can be no doubt of the utility of such charts to those navigators who are inclined to pay a proper attention to the important subject of local attraction, independent of the clear manner in which they impart a true idea of the curves of the existing magnetic variation; but, until navigators seriously turn their attention towards overcoming that obstacle to the *correctness* of the *dead reckoning*, they will be of little service to them. We hope, however, to see them more in use than they have hitherto been. The worthy Professor is availing himself, in the course of his arduous undertaking, of the numerous documents of this nature in the Hydrographic office at the Admiralty.

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* The method of ascertaining the trial-number of a chronometer adopted at the Royal Observatory is given in p. 523 of the same volume.

NAUTICAL MISCELLANY.

NAVAL INTELLIGENCE.

The Royal Navy in Commission.

⁂ S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

Actæon, 26—Hon. F. W. Grey, 20th Nov. Tripoli.
Ætna, S. V. 6—Com. E. Belcher, 9th Dec. at Oporto.
Alban, St. V.—Woolwich.
Alert, 18—Com. J. C. Fitzgerald, Pacific.
Alfred, 50—Capt. R. Maunsell, 21st Nov. Malta.
Algerine, 10—Com. Hon. J. F. F. De Roos, 12th Oct. at Bahia.
Alligator, 28—Capt. G. R. Lambert, 13th Aug. Madras.
Arachne, 18—Com. W. G. Agar, 9th Dec. arrived at Barbadoes from Halifax.
African, St. V. — Lieutenant Kennedy, Plymouth.
Ariadne, 28—Capt. C. Phillips, 10th Dec. Bermuda.
Asia, 84—Capt. P. Richards. Flag Ship, (*i*) Tagus, 11th Dec.
Astrea, 8—Capt. W. King, Falmouth.
Athol, *Troop Ship*—Mr. A. Karley, 4th Dec. sailed for Dublin.
Badger, 10—Com. G. F. Stowe, 15th Sept. Mauritius.
Barham, 50—Capt. H. Pigot 5th Oct. at Malta. Flag Ship (*e*).
Beacon, (late **Meteor**,)—Com. R. Copeland, Archipelago.
Beagle, 10—Com. R. Fitz-Roy, 1st Oct. Monte Video.
Belvidera, 42—Capt. Hon. R. S. Dundas, 20th Nov. at Tripoli.
Blanche, 46—Capt. A. Farquhar, K. H. C. B. 7th Dec. at Barbadoes.
Brisk, 3—Lieut. J. Thompson, Gold coast.
Britannia, 120—Capt. P. Rainier, 11th Dec. Tagus.
Briton, 46—Capt. J. D. Markland, C. B. 12th Jan. arrived at Plymouth.
Buffalo *Store Ship*, Mr. F. W. R. Sadler, *Master*.
Caledonia, 120 — Captain J. Hillyar, Tagus, 11th Dec.
Carron, St. V.—Lieut. J. Duffill, Lisbon.
Castor, 36—Capt. Rt. Hon. Lord John Hay, Lisbon, 4th Jan.
Challenger, 28—Capt. C. H. Freemantle, 1st Aug. sailed for Swan R.
Champion, 18—Com. Hon. A. Duncombe, 18th Nov. arrived at Malta.
Charybdis, 3 — Lieut. R. B. Crawford, ar. Gambia.
Clio, 18—Com. J. J. Onslow, 27th Sept. sailed for Rio.
Columbia, St. V. 2 — Lt. R. Ede, Woolwich.
Columbine, 18—Com. O. Love, 2d Dec. left Tortola for Halifax.
Comet, St. V.—Sheerness.
Comus, 18— (late Comet) Com. W. Hamilton, Plymouth.
Confiance, St. V.—Plymouth.
Conway, 28—Capt. Eden, North Sea.
Cordelia, 10—Com. C. Hotham, 5th Oct. Smyrna.
Curaçoa, 26—Capt. D. Dunn, 3d June, at Trincomalee.
Curlew, 10—Com. H. D. Trotter, 23d Sept. left Mauritius for Ceylon.
Dee, St. V.—Com. R. Oliver, Chatham.
Dispatch, 18—Com. G. Daniell, 15th Oct. Sailed for Jamaica.
Donegal, 74 — Capt. J. Dick. Flag Ship. (*d*) North Sea.
Druid, 46—Capt. S. Roberts, C.B. 25th Dec. sailed for Lisbon.
Dublin, 50—Capt. Rt. Hon. Lord J. Townsend, 25th Sept. Coquimbo.
Echo, St. V.—Lieut. Otway, Oporto, 9th Dec.
Excellent, 58 — Capt. T. Hasting, Portsmouth.
Fairy, S. V. 10—Com. W. Hewett, Sheerness.
Favourite, 18 — Com. J. Harrison, Gold coast.
Firebrand—Lieut. Buchanan, Woolwich.
Firefly, 2—Lieut. J. M'Donnel, Bahamas.
Firefly, St. V.—Lieut. T. Baldock, Woolwich.
Flamer, St. V.—Lieut. R. Bastard, 11th Jan. arrived at Portsmouth.

Fly, 10—Com. P. M'Quhae, 14th Nov. Port Royal.
Forrester, 3—Lt. W. H. Quin, 5th Jan. at Plymouth.
Gannet, 18—Com. M. H. Sweney, 11th Oct. at Jamaica from S. Martha.
Griffon, 3—Lt. J. Parlby, Plymouth.
Harrier, 18—Com. H. L. S. Vassal, Aug. at Bombay.
Hermes, St. V.—Lieut. J. Wright, 24th Dec. Malta.
Hornet, 6—Lieut. F. R. Coghlan. 20th Oct. sailed for South America.
Hyacinth, 18—Com. W. Oldrey, 30th Nov. ar. Portsmouth.
Imogene, 18—Capt. P. Blackwood, August, Malacca.
Investigator, 16—Sheerness.
Isis, 50—Capt. J. Polkinghorne, Flag Ship, (k) 13th Oct. Cape.
Jupiter, *Troop Ship*—Mr. R. Easto, 7th Jan. sailed for Mauritius.
Kangaroo, 3—Lieut. J. Hookey, August, Nassau.
Larne, 18, (*late Lightning*,)—Com. W. S. Smith, North Sea.
Leveret, 10—Lieut. W. F. Lapidge, 5th Dec. arr. Plymouth.
Lightning, St. V.—Plymouth.
Madagascar, 46—Capt. E. Lyons, 1st Jan. Trieste.
Magicienne, 14—Capt. J. H. Plumridge, June, at Malacca.
Magnificent, 4—Lieut. J. Paget, Port Royal.
Magpie, *Cutter*—Lieut. J. Moffat, Sheerness.
Malabar, 74—Capt. Hon. J. Percy, 15th Jan. Downs.
Mastiff, 6, S. V.—Lieut. J. Graves, Archipelago.
Melville, 74—Capt. H. Hart, 13th Aug. at Madras. Flag-ship. (h)
Messenger, St. Transp.—Lieut. B. Aplin, Chatham.
Meteor, St. V.—Lieut. Symons, 21st Sept. Malta.
Minx, 3—Lieut. G. G. Miall, Bahamas.
Nautilus, 10—Com. Rt. Hon. Lord G. Paulett, 9th Dec. Oporto.
Nimble, 5—Lieut. J. M. Potbury, 10th Dec. Bermuda.
Nimrod, 20—Com. Lord E. Russell, 27th Dec. sailed for Lisbon.
North Star—Capt. W. Paget, 20th Nov. Barbadoes.
Ocean, 80—Capt. S. Chambers. Flag-ship, (a) Sheerness.
Onyx, 10—Lieut. A. B. Howe, Plymouth.
Orestes, 18—Com. W. N. Glascock, Oporto, 9th Dec.
Pallas, 42—Capt. W. Walpole, 15th Nov. Port Royal.
Pearl, 20—Com. R. Gordon, 2d Nov. arrd. at Jamaica.
Pelican, 18—Com. J. Gape, 24th Oct. left Corfu.
Pelorus, 18—Com. R. Meredith, 13th Oct. Simon's Bay.
Philomel, 10—Com. W. Smith, 25th Nov. Gibraltar.
Pickle, 5—Lieut. E. Stopford, 20th Oct. arrd. at Jamaica.
Pike, 12—Lt. A. Brooking, Plymouth.
Pincher, 5—Lt. W. S. Tulloh, Bahamas.
Pluto, St. V.—Lieut. G. Buchanan, Bight of Benin.
Pylades, 18—Com. E. Blankley, 28th Oct. sailed for M. Video.
Racehorse, 18—Com. C. H. Williams, 2d Oct. sailed for Jamaica.
Rainbow, 28—Capt. Sir J. Franklin, Knt. 9th Dec. Patras.
Raleigh, 18—Com. A. M. Hawkins, 11th Oct. arr. Nauplia.
Rapid, 10—Com. C. H. Swinburne, 30th Nov. Malta.
Rattlesnake, 28—Capt. C. Graham, 23d Dec. sailed for Lima.
Raven, S. V. 4—Lieut. W. Arlett, Oporto.
Revenge, 78—Capt. D. H. Mackay, North Sea.
Rhadamanthus, St. V.—Com. G. Evans, Falmouth.
Romney, *Troop Ship*—Mr. R. Brown, sailed for Cork.
Rover, 1—Com. Sir G. Young, Bart., 15th Jan. Downs.
Royalist, 10—Lieut. R. N. Williams, 1st Jan. sailed for Falmouth.
St. Vincent, 120—Capt. H. F. Senhouse, 11th Dec. Tagus.
Salamander, St. V.—Com. W. F. Austen, Woolwich.
Samarang 28—Capt. C. H. Paget, 10th Oct. M. Video.
San Josef, 110—Capt. R. Curry, Plymouth, Flag-ship. (c)
Sapphire, 28—Capt. Hon. W. Wellesley, 14th Nov. Bay of Fundy.
Satellite, 18—Com. R. Smart, Downs.
Savage, 10—Lieut. R. Loney, Falmouth.
Scout, 18—Com. W. Hargood, Sheerness.
Scylla, 18—Com. Hon. G. Grey, 5th Oct. at Napoli.
Seaflower—Lieut., J. Morgan. 14th Jan. arrived at Falmouth.
Serpent, 16—Com. Symonds, Portsmouth Station.
Skipjack, 5—Lieut. W. Shortland, Bahamas.
Snake, 16—Com. W. Robertson, North Sea.
Southampton, 52—Capt. J. M. Laws, Chatham.
Spartiate, 74—Capt. R. Tait, 4th Jan. arrived at Portsmouth.
Sparrow, *Cutter*—Lieut. C. W. Riley, Portsmouth Station.
Sparrowhawk, 18—Com. Currie, *act.* 9th Nov. left Halifax for Bermuda.
Speedwell, 5—Lieut. W. Warren, 4th Nov. at Barbadoes.
Speedy, *Cutter*—Lieut. J. P. Roepel Plymouth.
Stag, 46—Captain N. Lockyer, North Sea.
Swan, 10—Lieut. J. E. Lane, North Sea.
Sylvia, 1—Lieut. T. Spark, Portsmouth Station.
Talavera, 74—Capt. T. Brown, North Sea.
Talbot, 28—Capt R. Dickinson, C. B. 29th Oct. Mauritius.
Trinculo, 18—Com. R. Booth, 12th Nov. sailed for Mauritius.
Tweed, 28—Com. A. Bertram, 14th Nov. Bermuda.
Tyne, 28—Capt. C. Hope, 30th Sept. 14th Oct. spoken lat. 5° S. lon. 29° W.
Undaunted, 46—Capt. E. Harvey, 29th Oct. Mauritius.
Vernon, 50—Capt. Sir G. A. Westphal, Knt. Plymouth.
Victor, 18—Com. R. Russell, 13th Nov. arr. at Barbadoes.

VICTORY, 104—Capt. H. Parker. Flag-ship (*b*) Portsmouth.
VIPER, 6—Lieut. H. James, off Tagus.
WARSPITE, 76—Capt. C. Talbot, Flag-ship, (*g*) 31st Oct., at Rio.
WINCHESTER, 52—Capt. Rt. Hon. Lord W. Paget, Bermuda, Flag-ship. (*f*)
WOLF, 18—Com. W. Hamley, August, at Penang.
ZEBRA, 18—Com. Lord F. Beauclerc, *act.* Aug. at Penang.

Paid off into Ordinary.

CHILDERS—18th Jan. Portsmouth.
CRUIZER—4th Jan. Sheerness.
SULPHUR—31st Dec. Portsmouth.
VOLAGE—15 Jan. Portsmouth.

We received the following from a Correspondent:—

To the Editor of the Nautical Magazine.

SIR,

IN your Supplement, p. 613, I notice an interesting detail of a new invention for the rescue of sailors from shipwreck, and of its having been most successfully used at the wreck of a large ship, Oct. 8th, in the Isle of Wight.

That a *rocket*, for the purpose of forming a rope communication between the shore and a stranded vessel, is a most *efficient* instrument, was on that occasion most clearly demonstrated by the "good service it did," *after* the celebrated mortar had *repeatedly failed;* and that the method of using it is simple and easy, may be inferred from its so completely succeeding on the first trial; and that in both these grand essentials for such purpose, it most eminently manifested not only "a decided advantage over Captain Manby's Gun," but a most "*decided*" *superiority:* all of which was admirably substantiated by fact. And let it not be overlooked, the *performance* of the rocket manifested also its *manufacturer* to be a good workman: nor shall the correct attention of those who *used* it be passed by—praise is due to all of them, and let them have their due. "Honour, to whom honour is due," is a maxim long established, a maxim, comprehended in the plain English word JUSTICE, which is professedly the grand basis on which all laws, civil, moral, and religious, are founded. And you, Sir, appear to be alive to the *practice* this doctrine inculcates, by the liberal manner and "good nature," with which you have vindicated Mr. Lang's claim to the invention of the safety-keel, &c. (p. 526.)

Well, Sir, as regards this excellent scheme for saving the lives of sailors, by reading the narrative as an article of news, in the ordinary, cursory manner, it might be read as though the plan and apparatus entire, emanated from the inventive mind of Mr. Dennett; but by the moderate use of attention, it appears there is no claim made to any part of it for him, but the rocket only: not a word about the *application* of its powers to carry a line to the intended object. Yet, in a general way, it would be read, (especially by those who knew nothing of any thing of the kind before,) that the invention altogether belonged to Mr. Dennett. However, a perusal of the following extract from the Transactions of the Society of Arts, will enable your discriminating readers to form some judgment, what part or portion of the entire plan and apparatus Mr. Dennett can justly claim as *his* "invention."

Society of Arts; Annual Volume for 1821.

"Preface, page 13.—Contrivances for the preservation of life have always experienced a ready attention from the Society of Arts, and liberal rewards in proportion to their merit. From this feeling, a substantial mark of approbation has been conferred on Mr. Trengrouse, for his method of effecting a communication between a stranded ship and the shore, by means of a rocket, and for the unwearied zeal with which he has endeavoured to get his plans introduced into practice.

"Page 161. Of the multitudes of seamen and others who perish yearly by shipwreck, a considerable proportion are lost in consequence of ships getting on shore, either by the violence of the wind, or by other accidents. In these disastrous circumstances the severity of their fate is aggravated with regard both to the sufferers themselves and the spectators, by the smallness of the interval interposed between security and destruction, and the seeming ease of effecting a communication between the stranded ship and the shore.

"Many inventions have already been proposed for this purpose; but having been brought into use very partially, or not at all, have failed of producing the benefits anticipated by the too sanguine benevolence of their authors.

"Captain Manby's apparatus, although resembling Mr. Trengrouse's in some particulars, is both less portable and less likely to succeed in actual practice. The initial velocity of a ball or shell is so great as to make it by no means easy, under the most favourable circumstances, to supply the cord attached to the ball with sufficient expedition: whereas, the flight of a rocket being not only much slower on the whole than that of a cannon-ball, but not immediately acquiring its utmost velocity, the risk of breaking the cord is greatly diminished.

"From experiments made at Woolwich, before Lieutenant-General Ramsey, and a board of officers, in conjunction with Rear-Admiral Sir Charles Rowley, and two captains in the Royal Navy, it appears that a rocket of 8 ounces, with a mackrel line attached to its stick, ranged to the distance of 180 yards; and that a pound rocket in similar circumstances ranged 212 yards. Experiments made for the same purpose, by the Society of Arts, demonstrated that a rocket 1¾ inch in diameter, will carry a cord completely across the Serpentine River in Hyde Park. Now the shortest of the ranges exceeds the distance of many stranded ships from the shore, especially on a rocky coast, and therefore ascertain the probable utility of Mr. Trengrouse's apparatus on a multitude of occasions, particularly within the limits of the British channel, the great thoroughfare for shipping of every description."

Now, Sir, being a member of the Society at that period, I had the opportunity of witnessing the experiments made in Hyde Park; and the rocket referred to, not only carried "the cord completely across the Serpentine river;" but also over a tree, that was some considerable distance beyond the river side; and this it did, as Mr. Trengrouse aimed it, in the most beautiful style. I perfectly recollected also, that the wind was blowing very fresh, and experiments were made in different directions, and all of them succeeded most admirably.

Besides these experiments being recorded and published by the Society of Arts, the London newspapers freely detailed them as a novelty of much public interest. And can it be possible that Mr. Dennett, nor yet any of his friends, never heard of Mr. Trengrouse's inventions? I am not, however, intending to advocate Mr. T.'s claim to the originality of this invention, (which cannot be necessary if I were disposed,) but furnish these facts for the information of your readers. Nevertheless, it may be asked by the way, for general information—Are not the plan and apparatus recently made use of in Mr. Dennett's name, exactly the same in *principle*, at least, as Mr. Trengrouse's?

Allow me, sir, to extract from the narrative in your Supplement. "A gentleman, named Ghrimes, discharged a rocket, of the invention of Mr. Dennett, and with this, at the first trial, a line was thrown over the ship." Why, sir, in the name of common sense, was not the same done exactly as Mr. Trengrouse threw a line over a tree in Hyde Park, as he proposed to do, and by exactly similar means? And pray, were not rockets *invented* long before Mr. Dennett's *grandfather* was born? I believe, Mr. Trengrouse did not make any claim to the *invention* of a rocket; but to the *application* of its powers to effect his great object, and to the rendering it practicable, and to the simplifying its mode of use. I am pretty certain that not one who knew of Mr. Trengrouse receiving a premium from the Society of Arts for his invention, ever once dreamt that it included *the invention of a rocket!*

But, in the last paragraph in the narrative detailing the wreck, &c. I see—"This species of rocket appears to possess a decided advantage over Captain Manby's gun, because a rocket, being impelled by its own force, goes equally all the way that it travels; but a shot from the gun goes off very violently at first, at the risk of breaking the rope." Comparing this with the fourth paragraph in my extract from the volume of the Society of Arts, beginning, "Capt. Manby's apparatus, although," &c. there seems such a *savour* of analogy, as almost to excite the idea that the writer had been reading the Report of the Society only just before he penned his own in favour of Mr. Dennett. "*This species* of rocket."

The question is now naturally excited, *What* does *this* mean? Is not a rocket a rocket all the world over? Is not a rocket the same thing, whatever may be its dress, or the colour of it? If Mr. Trengrouse projected a line by a rocket over a tree in Hyde Park, and Mr. Dennett projected a line by a rocket over a ship, in the Isle of Wight, are not the operations similar, and performed by similar means too? What is the difference? If Mr. Dennett has had the opportunity which local circumstances afforded, and used that opportunity for making the *first* trial with the rocket apparatus for rescuing the crew of a stranded vessel, and has acquired the honour of *so doing*—will that fortuitous circumstance necessarily *give* him the honour of being the *now* inventor, ten or twelve years *after* a similar invention had been exhibited to the public by the Society of Arts—by them promulgated to the world—and by them, their premium awarded to the inventor? Let Mr. Dennett bring his claim before the committee, and, no doubt, he will have *justice* awarded to him. Meantime, should this meet his eye, or any of his friends, perhaps the favour of an answer to the questions the case itself has suggested, will speedily be sent to you for insertion; which will particularly oblige *me*—and, I expect, not a few besides.

Submitting this to your candour for insertion in your communicative miscellany,

I respectfully subscribe myself, sir,
Your obedient servant,
OBSERVATOR.

January 10, 1833.

VARIETIES.

Rear-Admiral Sir F. L. Maitland, K.C.B. (Admiral Superintendent of the Dock-yard) whose flag (blue at the mizen) is flying on board the yacht Portsmouth, has been performing, *pro tempore*, the duties of Commander-in-Chief at Portsmouth, (vacant by the death of Admiral Sir Thomas Foley,) until succeeded in the command by Rear-Admiral Sir Michael Seymour, Bart. K.C.B. who hoisted his flag (blue at the mizen) afterwards, on board H.M.S. Spartiate, destined for the South American command. The Rear Admiral (being the senior officer at the port) will retain the command until the arrival of the next Commander-in-Chief.—*Ports. Herald.*

The mortal remains of the late distinguished Admiral Sir Thomas Foley, G.C.B. Rear-Admiral of Great Britain, and Commander-in-Chief at this Port, were interred in the Garrison Chapel on the 16th January, with Military honours due to his rank; on which mournful occasion, out of respect to the memory of one who had taken so conspicuous a part in the memorable exploits of the gallant profession of which he was so bright an ornament, a great number of Naval Officers on half-pay in the neighbourhood, as well as those employed, joined in the procession. At half-past twelve, the procession began to move from the Admiralty House, when the Victory commenced firing minute guns. 25 in number, and the batteries on shore 30 guns. The Excellent then continued firing 25 guns, and was followed by the Spartiate 74, which kept up the same firing at intervals of one minute, until three rounds from eleven pieces of cannon on shore indicated that the funeral service had been concluded; when the late Admiral's flag (white at the main) was hauled down, at a quarter before two o'clock precisely.—*Hants. Tel.*

The Combined Squadrons.—The Suffrein, French 90, has left the Downs for Cherbourg, whence she will proceed to Brest, where she will refit, and afterwards return to the Downs, *if required.* The Medée and Resolue, French (40 each,) have also gone to Brest to refit. The latter will return to the Downs immediately after shifting her masts, but the Medée will be relieved by La Flora, 40, which ship met with some damage on her way from Brest, and put into Cherbourg accordingly; but she is daily expected to join the squadron in the Downs. The other French ships, Cyrene (flag-ship,) and Melpomene, 60, remain in the Downs with the English ships Donegal, Revenge, Talavera, and Malabar. The crews of the English ships amuse themselves by practising the great gun exercise, and they are represented as now firing with great precision. The Revenge set the example on the 3rd inst. the Donegal followed on Tuesday last, and the Talavera on the following day. The French ships also took up the cue, and have been exercising in the same manner. The Stag, Castor, Conway, and L'Ariané (the last French,) are off the Dutch Coast, as well as the Dee steam frigate. —*Ports. Herald.*

New Steam-Ship.—We understand that the London and Edinburgh Steam-Packet Company have nearly ready to launch a splendid steam-ship, built on an entirely new principle. This vessel is the first of a series from the design of Mr. Charles Wood, ship-builder, Port-Glasgow; and will measure 206 feet in length, 52 feet in breadth; and will admeasure 880 tons, solid contents, (the method by which Government intend in future, by a bill to be brought into parliament to register British built ships.) She will be propelled by two engines, made by the celebrated house of Messrs. Boulton and Watt, of 110 horse power each, and is building in the highly-respectable yard of Messrs. Green, Wigram, and Green, Blackwall. It is expected that this fine vessel, which is to be commanded by that intelligent and excellent seaman, Captain Bain, of the Soho, will make the passage between London and Edinburgh in thirty-seven or thirty-eight hours. She will have a splendid poop, spacious saloons, a hold for goods, and her bottom is described as fine as that of a revenue cutter. Capt. Bain, we are proud to say, is a native of Fifeshire.—*Fife Journal, 5th Jan.*

The Transport department of Portsmouth, which, since the peace, has been conducted by a resident agent, is ordered to be done away with, and the duties appertaining to it are in future to devolve on the Flag Lieutenant of the Superintending Admiral of the Dock Yard.—*Hants Tel.*

The Transport establishment at Deptford, under Lieut. W. Bailey, is done away with, and Lieut. Bailey has received a superannuation for his long services in that employ.—*Hants Tel.*

Messrs. C. W. de Courcy Ross and R. L. Atkinson, midshipmen, of the Vernon, have been found duly qualified in navigation this week, for Lieutenants, at the Royal Naval College.—*Ports. Her.*

The number of vessels which entered into the United States, in the year ending on the 30th September, 1831, was 4754; tonnage entered, 922,952; departed, 972,504; number of seamen employed in navigating the same, 43,978.—*Hants Tel.*

An order has been issued to discontinue the system of employing convicts on the ships in ordinary.—*Ports. Her.*

Ship Launch.—On January 5th, a fine vessel was launched from the building-yard of Mr. Thos. Rowntree, at Ayre's Quay, named the Liberia; in honour of the interesting colony of Free Blacks on the western coast of Africa.—*Sunderland Herald.*

The following are the articles of the proposed treaty between Holland and the Five Powers, as published in the *Handelsblad*, with Belgian strictures:—

"1. The free navigation of the Scheldt, at a very moderate rate of tonnage.—This is plausible, but it is asked, What right has Holland to refuse ingress and egress to a Belgian seaport, as is Antwerp, where the tide rises many feet, and the water is salt, which is the national definition of a seaport?

"2. The navigation of the Meuse and Rhine, on payment of the dues of the convention of Mentz.—This is vague, for the canals which lead from one river to the other are not mentioned, as in the treaty of the twenty-four articles, which states, 'internal waters.'

"3. Belgium to pay, from the 1st of January, 1833, 8,400,000 florins, as interest of her share of the debt.—Belgium has no objection, when the treaty is signed on both sides, to pay her share.

"4. Holland to be also a neutral country, advantageous to both countries.—Yet, in the next paragraph, there is a specification that the Belgian army shall be reduced, while the Dutch is to subsist until further measures: this arrangement looks deceitful.

"5. The question of Luxemburg to be settled by further negociations.—Necessarily; for the German Diet, as well as the Five Powers enter into the discussion.

"6. Leifkenshock and Lillo to be given up three weeks after the signature of the treaty.—And why not now? and why are not the twenty-four articles accepted, instead of this new project?"—*Times.*

Proposed Docks at Woolwich, with Rail-road thereto, &c. — The usual notice required in such cases, has been affixed to the doors of the Middlesex Sessions-house, of an intention to apply to parliament, during the ensuing sessions, for power to form a rail-road from the Commercial-road, Limehouse, to the river Thames at East Ham, opposite to Woolwich, and also a carriage road, to run parallel, or nearly so, with the railway. Also for power to establish a ferry across the Thames to Woolwich. Also for forming docks, or slips, and landing places, on both sides of the river, for steam-boats and other vessels, with proper approaches, canals, locks, basins, wharfs, bridges, &c.; and for power to impose tolls, rates, and duties, for the maintenance of the same. It is intended that the rail-road should pass through Stepney, Limehouse, Poplar, and Bromley, Middlesex, and East and West Ham, and Barking, in Essex.—*Times.*

The topmasts of the ship Malabar, fitted on Captain Morgan's principle, answer every expectation, and were inspected in the Downs, on Monday, by Admiral Sir P. Malcolm, and the Captains of the ships comprising the squadron.—*Hants Tel.*

ROYAL HUMANE SOCIETY.

The half-yearly general meeting of the Governors of this institution, was held yesterday at the society's house in Bridge-street, Blackfriars, Mr. Justice Gaselee in the chair.

The minutes of the last general Court, and of the meetings of the committee, having been read and confirmed, thanks were voted to the President, Vice-Presidents, and the various officers of the institution.

The Secretary reported, that since the last Court 95 cases had occurred, 85 of which had been restored to life. 10 of the aggregate number were attempted suicides.

The Society's silver medal was awarded to the following persons:—

To Francis Higginson, chief-mate of the Lion revenue-cutter, who saved the life of William Thorning, a boy, in Salcomb harbour, on the evening of the 20th of December last. The boy fell overboard from the larboard quarter during a heavy gale and a rough sea; a cry was raised, and Mr. Higginson ran up from his cabin, and jumped overboard; the boy had drifted to a considerable distance astern before he was rescued. Mr. Higginson was labouring under the effects of a severe contusion of the knee at the time.

To Mr. Don Philip Dumaresque, junior mate of His Majesty's ship Onyx, who saved a lad named William Carter, on the 23d of January, 1832, off Sheerness.

To Mr. F. W. Mant, mate of His Majesty's ship Ocean. On the 14th of February, 1832, William Fisher, a drummer, fell overboard, off Sheerness, and Mr. Mant instantly jumped after him, and overtook him at the moment he had become insensible, and his head under water.

To Daniel Magrath, a carpenter employed at the bridge works, Limerick. A girl named Mary Dempsey, aged 13, fell into the river near Baal's-bridge, and Magrath jumped after her with his clothes on, and had a narrow escape of perishing, as the child clung to him, and held him under water nearly three minutes; he, however, disengaged himself, and brought her up by the hair of her head. This was the second instance of this man saving a fellow-creature from drowning.

To a labouring man named Cook, of Oxford, who exerted himself in endeavouring to save the life of Mr. Penney, of St. John's College, and saved two other persons at different periods.

To Mr. G. Johnston, mate of His Majesty's ship Mastiff, who saved a seaman named George Farley, at Napoli di Romania, on the 21st of June, 1831, and also of another seaman, named William Corbie, in Portsmouth harbour, in May last, at 10 o'clock at night, at great personal risk.

To Lieutenant John Finlayson, commander of the City of Bristol steam-packet, who at various periods has saved six persons from drowning.

To Lieutenant John Barnes, R.N.; who in the month of October last, saved a man named Nelthorp, whose boat was upset off Lumps Fort, near Portsmouth. Lieutenant Barnes swam 200 yards from the shore to the man, and brought him safe to land in a state of exhaustion, having been buffeting with the waves twenty minutes.

To Lieutenant Davis, of the Coast Guard Station, near Rye, who saved one of the crew of the sloop Dartmouth, which was wrecked off that coast on the 10th of November last.

To Captain Lillicrap, R.N.; for his new invention, which consists of longitudinal iron bars, with ropes being affixed to the ordinary sea-buoy, a plan which has been adopted by the Board of Admiralty, and which has already been very instrumental in saving the lives of persons who had fallen overboard.

The sum of £3. 3s. was also awarded to William Frederic Owen, who saved the life of a boy who had fallen from the Chain-pier, at Brighton, on the 1st of September last.

The amount of the receipts of the institution for the past year was—2,534*l.* 11*s.* 6*d.*, and its expenditure 2,438*l.* 3*s.* 2*d.*

The officers for the ensuing year were then chosen, and thanks having been voted to the chairman, the meeting adjourned.—*Times.*

Plym and Tamar Humane Society.—The annual meeting of this praiseworthy and very excellent institution, was held at the Royal Hotel, on Tuesday last, Captain Basden, R.N. in the chair. Mr. Roberts, surgeon, to whose philanthropic exertions this port is principally indebted for the establishment of a Humane Society, read the Report, which, after shewing the state of the funds, set forth that seventeen receiving houses had been established, and that, since its establishment, forty-four cases of drowning had occurred in the port, fifteen of which had proved fatal, and fifteen persons had been rewarded by the Society, for the exertions they had used in saving persons under great personal risk and danger.—*Plym. Herald.*

His Majesty has most graciously been pleased to nominate and appoint Capt. Sir Francis A. Collier, C. B., late Commander of His Majesty's ship Vernon, a Knight Commander of the Royal Hanoverian Guelphic Order.—*Hants. Tel.*

The King has been pleased to confer the honour of Knighthood upon Rear-Admiral Charles Conyngham, Military Knight Commander of the Royal Hanoverian Guelphic Order.—*Hants. Tel.*

His Majesty has been graciously pleased to nominate Commander Charles Haultain, R. N. a Knight of the Royal Hanoverian Guelphic Order.—*Hants. Tel.*

The office of the Rear-Admiral Superintendant, Sir Frederick Maitland, K. C. B., is removed to the building that was erected for the School of Naval Architecture in the Dockyard, where rooms have been appropriated for that purpose, and where the duties will be discharged from Monday next. —*Hants Tel.*

It is reported that a field officer, and 250 royal marines, are to embark for the infant settlement on the Swan River, which it appears is in need of greater military protection than has yet been afforded to it.—*Hants Tel.*

On the 9th of January a Court of Directors was held at the East India-house, when the following commanders took leave of the Court, previous to departing for their respective destinations, viz: Captain Robert Locke, Duke of York; Captain Joseph Dudman, Inglis, for Bengal and China; Captain James Kellaway, Bombay, for St. Helena, Bengal, and China; Captain John Hine, Marquis of Huntly; and Captain Walter H. Whitehead, Duke of Sussex, for Bombay and China.—Captain Robert Scott was sworn into the command of the ship Vansittart, consigned to Bengal and China.

The following is in the Valparaiso newspaper Mercurio, of the 6th August last:—By the brig Jansen we are informed that the British brig Tiber, anchored at Point Arenas, near Valparaiso, blew up; and Captain Gibson, the mate, and part of the crew, in all 12 persons, perished in the explosion, caused by 30 barrels of powder: only five seamen were saved; they were occupied on the foremast, and were precipitated by the shock into the water, together with part of the deck. No one knows what gave rise to this melancholy accident.—*Hants Tel.*

A few days since as a Dutch fishing-boat was lying off Orfordness, a large alligator was observed lying on the water in an exhausted state. The crew succeeded in getting it on board safe, and took it with them to Holland. The instance of such a creature visiting our seas has never occurred within our recollection.—*Ipswich Journal.*

The Asia and the Portland, convict ships, have both sailed from the river for Australia.—*Ports. Herald.*

The Lotus, convict ship, has sailed with 216 convicts for Van Diemen's Land, under the medical superintendency of Dr. Brock.—*Ports. Herald.*

The Neptune, 120, lately launched from this dockyard, has been undocked, and moved to the moorings of the Nelson, off the dockyard. She will be fitted in a most complete way, and kept, till required for active service, as a show ship.—*Ports. Herald.*

PROMOTIONS AND APPOINTMENTS.

Promotions.

Captains—O. Foley; J. M. Laws.

Commanders—C. Burnett; T. Gregory; J. Wheatley.

Retired Commanders.—A. Fairbairn; F. Frankling; J. Woolward.

Lieutenants—G. Bott; Hon. J. R. Drummond; E. Grey; Hon. G. F. Hastings; C.G. E. Napier; C. F. Newman; T. M. C. Symonds; D. S. Tindal.

Pursers—W. Anderson; E. Brown; W. Clatworthy; W. O. Cox; J. Evans; R. W. Fox; W. A. Harris; E. Rowe; J. Thompson.

Appointments.

Admiral Sir Thomas Williams, G.C.B. is appointed Commander-in-Chief at Portsmouth, vice Admiral Sir T. Foley, G.C.B. deceased.—Admiral Sir W. Hargood, G.C.B. and G.C.H. is appointed Commander-in-Chief at Plymouth, vice Admiral Sir M. Dixon, K.C.B. whose command will expire in May next.—Captain C. R. Williams is appointed Flag-Captain, and Mr. T. Williams, Purser of H.M.S. Spartiate, Secretary to Admiral Sir T. Williams.

Alban, St.V.—*Assist.-Surg* R. L. Hanmer.

Asia, *Conv. Ship—Surg.* T. Galloway.

Buffalo, *Store Ship—2d Mast.* R. Chegwin.

Comus, 18—*Lieut.* T. P. Dobree.

Curlew, 10—*Purser, act.*, J. Chapman.

Druid, 46—*2d Mast.* C. Tozer.

Fly, 18—*Lieut.* J. L. R. Stoll.

Griffin, 3, *Cutter—2d Mast.* S. Larke.

Isis, 50—*Lieuts.* J. H. Windham, W. M'Neale; *Mid.* J. Miller.

Jane, *Conv. Ship—Surg.* R. Dunn.

Jupiter, 30, *Troop Ship—Surg.* A. Ferguson.

Kangaroo, 3—*Lieut.* F. Gilly.

Magnificent, 4—*Surg.* R. H. Brown.

Malabar, 74—*Mid.* W. H. Darnell.

Pearl, 20—*Master* M. Hoskins.

Pincher, 5—*Lieut.* J. Hookey.

Prince Regent, *Yacht—Mast.* B. Hunter.

Prince Regent, 120—*Carpr.* W. Burnett.

Romney, 30, *Troop—2d Mast.* J. Watson.

Satellite, 18—*Lieut.* T. L. Massie.

Sparrow, 10, *Cutt.—2d Mast.* M. Katon.

Spartiate, 74—*Lieut.* E. Symonds; *Flag Super. Lieuts.* E. Grey, W. Houston, T. M. Rodney.

Speedwell, 5—*Lieut.* W. Crooke.

Talbot, 28—*Purser,* E. Thorne.

Vernon, 50—*Lieut.* G. S. Freemantle.

Victor, 18—*Lieut.* J. Abbot.

NEW MERCHANT VESSELS. FROM LLOYD'S REGISTER FOR 1833.

Reported to 20th January.				*Reported to 20th January.*			
VESSELS.	RIG.	WHERE BUILT	TONS.	VESSELS.	RIG.	WHERE BUILT	TONS.
Carnarvon	Schooner	Carnarvon	96	Nightingale	Snow	Whitby	263
Druid	Ship	Liverpool	75	N'thumbrian	Barque	Shields	351
Excellent	Schooner	Fowey	83	Ouse	Sloop	Newhaven	66
Fame	Sloop	Ulverstone	79	Port Glasgow	Smack	Port Glasgow	83
Frederick Huth	Schooner	Liverpool	200	Sarepta	Snow	Yarmouth	161
				Tapley	Ship	Liverpool	313
Haidee	Smack	Dumbarton	153	Tar	Schooner	Yarmouth	100
Hope	Schooner	Arbroath	148	Treasurer	Brig	Peterhead	169
Ludlow	Barque	Sunderland	286	Vanguard	Snow	Whitehaven	237
Margaretta	Schooner	Newcastle	91	Water Lily	Schooner	Stockton	184
Nerio	Schooner	Salicombe	91	Williams	Schooner	Cork.	138

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1833.

Continued from page 52.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
49 Albion	Leishman	Shields	—	Off Cromer	16 Dec	6806 Run d. cw. sd.
50 Agnes	Melion	Sidney	—	Torres Straits	16 Aug.	6807 Total.
51 Barbara	Henzell	Pictou	Newcastle	Goodwin	—	6810 Totally lost.
52 Beaver	Matherson	Liverpool	Ft. William	Off Derby how	28 Dec.	6810 Cr sd. Total.
53 Brisk	Of London	Sydney	—	Wallace I.	18 April	6811 Crew saved.
54 Camilla	Bibbing	St. John's	—	Newfoundld.	2 Dec.	6809 Crew saved.
55 Coronation	Rider	Lynn	Wakefield	Saltfleet	17 Dec.	6805 Strand. cr. sd.
56 Catherina	Gray	Newport	Truro	Off Falmouth	31 Dec.	6809 Abandoned.
57 Corkrump	Smith	Tegnmouth	Dartmouth	Westbay	17 Dec.	6805
58 Dolphin	—	Ireland	Bristol	S. Dew. Hd.	17 Dec	6808
59 Earl Gower	Alson	Leith	Wick	Wick Bar	11 Jan.	6811 Crew saved.
60 Economy	Brown	—	Dundee	Coquet I.	23 Dec.	6807 Crew saved.
61 Eliza ?	Conway	Colchester.	Hull	Not heard of	—	6810 Sailed 11 Dec.
62 Elizabeth ?	Johnson	Wells	—	Unheard of	since	29 Dec. 6811.
63 Elizabeth	Edwards	Bangor	Bristol	Br. Channel	10 Jan.	6811 Crew saved.
64 Elizabeth	Radford	Plymouth	Helford	—	31 Dec.	6809 Foundered.
65 Elsington	Gustard	Shields	London	Gunfleet	31 Dec.	6808 6 drowned
66 Ganges	Johnson	Matanzas	Ostend	Ostend	20 Dec.	6806 All saved.
67 Gen. Phipps	—	Pugwash	London	Coast Nova Scotia	16 Nov.	6804 Doubtful.
68 Gipsey	Briant	Wales	Plymouth	Off St. Ives	29 Dec.	6809 Crw. drowned
69 Harriet	Sherwood	Beccles	Goole	Off Dudgeon	14 Dec.	6804 Crew saved.
70 Industry	Main	—	—	Off Lochindl.	1 Jan.	6810 Crew saved.
71 Jas. Lawes	—	Liverpool	St. John's	At Sea	9 Dec.	6807 Aband. leaky
72 Jane	MailSchooner	—	—	Off St. Thos.	23 Nov.	6811 Cr. & a. p. sd.
73 John and Thomas	Spencer	Hull	Emden	Borkum	11 Dec.	6805 Crew saved.
74 Josephine	Britton	Belfast	New York	—	Dec.	6805 Sold.
75 Juno	Hall	London	Riga	Oesel	19 Sept.	6804 All saved.
76 Lalla Rookh	Phillips	Riga	Kirkaldy	Olend	26 Nov.	6806 Crew saved.
77 Lark	Taggart	Harrington	—	Solway Firth	Dec.	6809 All lost.
78 Latona	Mc. Nair	Newfoundland	Liverpool	Lytham	25 Dec.	6807 Crew saved.
79 Lion *	Ferguson	Liverpool	B. Ayres	Solis Grand	8 Sept.	6806 Part saved.
80 Leonidas	—	Newcastle	Nantes	Goodwin	14 Jan	6811 Crew saved.
81 Margaret ?	Davison	Hull	Ostend	Unheard of	since	1 Dec. 6811.
82 Mary	—	Of Ilfracombe	—	Abertham	20 Dec.	6806 Crew saved.
83 Nautilus	Thomas	Dingle	Cork	Blasqt. Sand	8 Jan.	6811 Crew saved.
84 Nelly	Lawson	Maryport	—	N. Kircudbrt	20 Dec.	6809
85 Prince Eugene	—	Rio Grande	Havana	Bahamas	5 Nov.	6809
86 Robert	Reay	Pictou	Boston	C. Breton	26 Nov.	6805
87 RoyalGeorge	—	—	—	Fishguard	3 Jan.	6810 Broke adrift, crew saved.
88 Sarah	—	Matanzas	—	—	29 Oct.	6809 Crew saved.
89 A Schooner	Unknown	—	—	Off Liverpool	15 Dec.	6804 Sunk at sea.
90 Severn	Mc. Key	Lancaster	Ft. William	Off St Annall	28 Dec.	6810 Cr. sd. total.
91 Sir E. Codrington	Childs	Quebec	England	St. Laurence	1 Dec.	6811 Beset by ice.
92 Shamrock	Schooner	—	—	Off Greenock	1 Jan.	6809 Run foul of.
93 Duchess of Somerset	Whiting	Plymouth	Wales	Off Padstow	31 Dec.	6809
94 Sparrow ?	Wilson	Liverpool	Dublin	Dublin Bay	30 Dec	6809
95 Steer-ma-well	Drogher	St. Lucia	—	Roche Bay	23 Nov.	6811 Crew, &c. sd.
96 Trusty ?	Williamson	Leith	London	Off Harwich	24 Dec.	6807 Broke adrift.
97 Unknown	—	—	—	At Sea	Dec.	6809 A Schooner.
98 Unknown	A Brig 250 tons	—	—	Off Scilly	31 Dec.	6810
99 Unknown	—	—	—	Off St. Davids	20 Dec.	6806
100 Unknown	—	—	—	Off Shoham	25 Dec.	6808 About 120 tns
101 Venus	Evans	—	Galway	Dorgey Sd.	17 Dec.	6806 Only mate sd.
102 Wellington	Fisher	Liverpool	—	Islay	17 Dec.	6806 Broke adrift.
103 Wharfinger	—	Of Sunderland	—	—	16 Dec.	6805 Crew saved.
104 W. Booth	Linch	Quebec	Liverpool	Galway	13 Dec.	6805 Crew saved.
105 William	—	Sligo	London	Stromness	15 Dec.	6807 Total.

The Wreck of the Brenda, No. 275, of our first volume, has been sold for £100.

* 37,000 dollars saved, part of cargo lost in boats, and remainder, with hull of vessel, sold for 2,200 dollars.——[?] signifies doubtful.

VESSELS DETAINED BY ACCIDENTS, &C.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE DETAINED.	WHEN.	PARTICULARS.
Bob Logic	Champion	Liverpool	Newfounld	Milford	15 Dec.	6804 Nearly a wrk.
Nymph	Walters	Cadiz	Newfounld	Dartmouth	24 Dec.	6807 Damaged.
Royal Tar	Head	London	Dublin	N. Arklow	29 Dec.	6808 Ashore.
Sisters	Ramsay	Demerara	London	Dem. Bar	25 Nov.	6818 Aground.

VESSELS SPOKEN AT SEA.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE SPOKEN.	WHEN	PARTICULARS.
Ellen	Dixon	London	V. D. Land	2 N 27 W	30 Nov.	6810
Elora	———	Glasgow	Bombay	22 S 60 E	22 Sept.	6807
Hecla	Allen	Liverpool	Savana	37 N 63 W	8 Dec.	6810 Lost boats.
Hermitage	———	London	Boston	42 N 47 W	13 Dec.	6810 Out 73 days. Supp. provisions.
Jane	———	Liverpool	Maranham	6 N 32 W	24 Nov.	6807
Matilda	———	Liverpool	Lima	Off C. Horn	14 Oct.	6807
Pacific	———	Liverpool	New York	44 N 51 W	26 Dec.	6811
Peru	———	Liverpool	Valparaiso	6 N 18 W	14 Sept.	6810
Rainbow	———	Cette	Rio Janeiro	18 W 34 N	5 Nov.	6804
Ruckers	———	Liverpool	Savana	29 N 42 W	24 Nov.	6805 By the Cora.
Trickler	———	Liverpool	Demerara	30 N 15 W	25 Nov.	6805

IMPORTANT TO SHIP OWNERS AND SAILORS.—An order has lately been issued from the Treasury, for the purpose of relieving the shipping interest, by allowing the duty to be returned on the following articles when consumed at sea; namely, beer, ale, porter, tea, soap, refined sugar, British manufactured tobacco and vinegar, and other goods, to be shipped from the bonding warehouses, free from duty. The table below will be found of service to all persons concerned :—

Goods allowed.	*Per Day.*	*To whom allowed.*
Beer, ale, and porter, (together or separate)	1 quart.	Master, each mate, and passenger.
*Tea	¼ oz.	Crew and passengers.
Coffee or Cocoa	1 oz.	Ditto.
Soap	½ oz.	Ditto.
Sugar, viz. raw or molasses, (together or separate)	2 oz.	Ditto.
Ditto, British refined	3 oz.	Master, mate, and passenger.
†Tobacco, British manufactured, or Foreign segars (together or separate)	½ oz.	Crew and passengers.
‡Spirits viz. Rum in the portion of half Brandy Geneva B. P. Rum	½ pint	Ditto.
Wine	1 quart	Master, mate, and passengers.
	Per week.	
Fruit dried, viz. almonds, currants, dates, figs, prunes, raisins	2lbs	Crew and passengers.
Rice, or Paddy	2lbs	Ditto.
Vinegar	½ pint	Ditto.

* With the option to take the entire quantity required for the voyage, of either species of these articles, in the same proportion as is allowed to be substituted in the Navy, namely, half an ounce of tea to be considered equal to one ounce of cocoa or coffee.

† The segars to be shipped from the bonded warehouses free of duty.

‡ In cases where the number of persons on board a vessel may not be sufficient to authorise the shipment of so large a quantity of each description of Foreign spirits, under the regulations of the general order of the 1st of September, 1832, as forty gallons, the same may be allowed to be shipped in a package containing not less than three dozen reputed quart bottles, or in casks containing ten gallons, when the quantity required shall not exceed ten gallons; and in casks of twenty gallons, when the quantity shall exceed ten and be under twenty gallons; and where the quantity shall be equal to, or exceed forty gallons, the foreign spirits are only to be shipped in a legal sized package, in conformity with the directions of the said order.—*Portsmouth Herald.*

Officers of the Royal Navy on the List at the close of the years 1831 and 1832:—

	Dec. 1831.	Dec. 1832.
Flag-officers	182	171
Retired Ditto	32	33
Retired Captains	13	10
Captains	806	800
Commanders	896	883
Lieutenants, including those who have accepted Rank	3473	3413
Retired Masters	18	16
Masters	523	496
Physicians and Retired Surgeons	55	58
Surgeons	721	718
Assistant-Surgeons	331	324
Pursers	642	632
Totals	7692	7554

—*Plymouth Herald.*

His Majesty's Post-office packets are, by a recent order, to wear *blue ensigns* and *pennants*, instead of *red*, as heretofore.

The Admiralty have ordered a ship at this port to be sheathed with thin lead instead of with copper. We believe this is only intended for ordinary service. As to the success of this experiment, we will not pretend to determine; perhaps it will, in some measure, depend on the nails used for fastening the lead on the bottom. There will doubtless be some chemical or galvanic action among some of the agents employed; that is to say, the copper bolts, lead, nails, and sea-water, but as we believe the lead constantly used on the cut-water of ships is not materially decomposed, we do not see much reason for mistrusting the success of the intended experiment, the result of which, when made, we will endeavour to lay before our readers.—*Ports. Herald.*

In consequence of a representation made by the Committee of Lloyd's to the Lords of the Admiralty, their Lordships have given directions for ships of war to proceed off the chops of the Channel with supplies for the homeward bound trade.—*Hants Tel.*

ADMIRALTY ORDERS.

ADMIRALTY ORDERS, &c.

(*Circular, No.* 86.)

"*Admiralty, 6th December*, 1832.

"The charts, books, and papers issued from the Hydrographical Department of this office, being seldom transferred from one officer to another, or returned into store, without considerable deficiences, the Lords Commissioners of the Admiralty hereby give notice, that, in future, a Receipt, to be signed by the Hydrographer, stating that the said charts, books, and papers have been returned in good condition, or have been satisfactorily accounted for, will be required to be produced by the commanding officer of each of his Majesty's ships and vessels on passing his accounts.

"By Command of their Lordships,

"JOHN BARROW.

"To all Captains, Commanders, and Commanding Officers of His Majesty's Ships and Vessels."

(*Circular, No.* 87.)

"*Admiralty Office, Jan.* 11, 1833.

"The following are to be the numbers of Mates, Midshipmen, and College Midshipmen, borne on the books of his Majesty's ships under the regulations of their Lordships' Circular Order, No. 65, of the 1st October, 1831, of whom the numbers stated in the second column are to be selected from among the Mates who have passed prior to the year 1830, or from young gentlemen educated at the Royal Naval College, who may have completed two years' time afloat—the latter class however to be confined as at present to sea-going ships, viz.

	Complement.	*of which to be Mates passed prior to 1830, or College Midshipmen,*
1st Rates	24	8
2d	20	8
3d	16	5
4th	10	4
5th	10	4
6th	8	4
Sloops	3	1
Cutters, Gun Brigs, &c.	2	1
Guard Ships	8	4

And the numbers of Volunteers of the 1st class in each rate fixed by their Lordships' Circular Order, No. 59, of the 15th January, 1831, are in future to be as follows:

	Vol. 1st Class.	*Coll. Vol.*
1st and 2d Rates, Sea-going Ships	3	6
3d Rates	2	5
4th and 5th Rates	2	4
6th Rates, and Sloops with 115 men	1	3
Guard Ships	3	0
10-Gun Brigs	0	1

The reduction in the Volunteers of the first class to be effected as vacancies occur.

"By Command of their Lordships,

"JOHN BARROW.

"To all Commanders-in-Chief, Captains, and Commanding Officers of His Majesty's Ships and Vessels."

MOVEMENTS OF TRANSPORTS.

Amphitrite—Plymouth.

Arab—15th Oct. sailed from the Cape for Mauritius.

Diligence—Portsmouth.

Hope—Plymouth.

Maitland—Lieut. Saunders, Deptford.

Numa—Lieut. Woodman, Deptford.

Orestes—Deptford.

Prince Regent—13th Jan. sailed from Cork for Mediterranean.

Sylvia—sailed westward 3d Jan.

Births.

On the 5th inst., the Hon. Mrs. Martin, lady of Captain Fanshawe Martin, R.N., of a son.

At Lord's-lane, near Hoddesdon, the lady of Captain O'Brien, R.N., of a daughter.

At Hambledon, Hants, on the 25th ult., the lady of William Cooley, Esq., R.N., of a son.

At Upper Moira-place, Southampton, on Tuesday morning, the 18th inst. the lady of Captain Inglefield, R.N. of a son.

On Tuesday the 11th inst., the lady of W. J. Rundle, Esq. Surgeon, of Gosport, of a daughter.

At Pickle Lodge, near Burnham, Norfolk, the lady of Commander Mc. Hardy, of a daughter.

At Emsworth, on the 14th, the lady of Captain W. H. Pierson, R.N. of a son.

On the 18th inst. the lady of Lieut. G. T. M. Purvis, of a son.

At Gosport, on Saturday the 12th inst. the lady of Henry Tucker, Esq. Purser of H.M.S. Beacon, of a son.

Dec. 31, in Frith-street, London, the lady of Lieut. J. Wolfe, R.N. of a son.

On the 23d inst. at Chatham, the Lady of Capt. T. Gallwey, R.N. commanding the Ordinary at that port, of a daughter.

Marriages.

At Pontefract, Yorkshire, Capt. Broughton, R.N. nephew of General Sir John Delves Broughton, Bart., to Eliza, eldest daughter of John Perfect, Esq., of that place.

At Edinburgh, on the 1st inst., Lieutenant James Kerr, R.N., to Helen, daughter of the late Adam Smith, Esq. of Stockbridge.

On Wednesday last, Mr. Lyons, M.D. of Stonehouse, Plymouth, to Miss Sarah Barnard, fourth daughter of Mr. David Barnard, of Hanover-street, Portsea.

On Tuesday last, at Islington, Rear-Adml. Barker, of Cold Harbour, Gosport, to Mary-Ann, daughter of J. Hunter, Esq., of Compton Terrace.

At St. George's, Hanover-square, the Hon. Capt. Hope, to Miss Charlotte Tollemache, daughter of Admiral and Lady Tollemache.

At Birmingham, Lieut. Charles Hopkins, R.N., to Sarah, only daughter of Daniel Ledsam, Esq. of Summer Hill.

On Thursday the 17th inst., by the Rev. J. F. Churton, Lieut. B. K. Barnes, R.N. to Catherine Letitia, eldest daughter of the late William Falwasser, Esq., of the Haymarket, London.

Deaths.

We have to record the death of Admiral Sir Thomas Foley, G.C.B., Rear-Admiral of the United Kingdom, and Commander-in-Chief at this Port, which took place on the 9th of January, after a short illness. The deceased was in his 77th year, and his name will be handed down to posterity, as that of one of its most gallant and honourable defenders, who, after a long and active life, spent in the public service, carries with him that reward which no man can take from him—a claim to the gratitude of his country. —*Portsm. Herald.* From which we learn that a slab, with the following Inscription, is to be placed in the Garrison Chapel at Portsmouth: "Admiral Sir Thomas Foley, G.C.B., Rear-Admiral of Great Britain, died in command of His Majesty's Ships at Portsmouth, on the 9th January, 1833."

At Deptford, on the 13th ult. Mr. John R. Spencer, Master of the Prince Regent yacht, (1804) aged 62.

At the Royal Hospital, at Haslar, Mr. S. Braydon, gunner of the Immortalite.

In Dublin, 9th ult. Lieut. Matthew Phillis (1815,) R.N.

On 19th ult. Lieut. Fred. Lloyd (1811,) R.N.

At St. Peter's, Thanet, Lieut. W. Rosson, R.N. out-pensioner of Greenwich.

Lately, the following Commanders—R. Tomlinson (1814;) Alex. Mercadell (1814;) G. W. Sarmon (1815.)

At Dartmouth, Lieut. Creed, R.N. aged 80. He was the oldest Lieutenant on the list, and an out-pensioner of Greenwich Hospital.

Lately, at Thames Ditton, Captain John J. Mitchell, R.N (1802.)

On the 10th Dec. at St. Peter's Valley, Jersey, deeply lamented, James Kirke, Esq. R.N. late of his Majesty's steam vessel Meteor, and of East Retford, Nottinghamshire.

Lieut. Phipps, (1815.)

On the 7th inst., in the 68th year of his age, George Turnbull, Esq., of Sloane-square, Chelsea, surgeon, late of the Royal Navy.

On the 22d inst. at Tregony, Cornwall, Captain William Hennah, C.B, one of the old school of British sailors, having entered the navy under Wallis, the circumnavigator, and finished his active career in the wake of Collingwood at Trafalgar.

At Titchfield, on the 21st December, Capt. Covey, R.N. aged 70, deservedly regretted.

At Felbrigg Hall, Norfolk, in the 65th year of his age, deeply and sincerely regretted, Vice-Admiral Wyndham, nephew to the late Right Hon. W. Wyndham.

On the 27th ult. at his residence, Barton-place, near Exeter, Shuldham Peard, Esq., Vice-Admiral of the White.

At High-street, Gosport, after a long and painful illness, in his 75th year, George Herries, Esq., Purser, R.N.

On the 8th instant, at Folkestone, Commander Smith Cobb. He was highly esteemed and respected in his neighbourhood.

Lately, on the Western Coast of Africa, of pulmonary consumption, Mr. Mc. Mickers, Clerk of the Pluto, steam vessel.

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THE

NAUTICAL MAGAZINE,

&c.

MARCH, 1833.

HYDROGRAPHY.

Note.—All Bearings are Magnetic, unless otherwise stated.

23. Observations *on the* Navigation of the Dardanelles, Bosphorus, and Black Sea, *pointing out some of the defects in the directions at present in use, by* R. D. Middleton, *Master in the Merchant Service.*

It is with much satisfaction that we present our nautical readers with the following useful observations. Although in minute description they are necessarily incomplete, they yet contain the best information that we have respecting the various places whereon they treat; and the clear and seaman-like manner in which this is conveyed reflects credit on the service to which their author belongs. Our limits oblige us to reserve for another number the remarks of Captain Middleton on the Black Sea, which shall be accompanied by a sketch of the Bosphorus and the harbour of Sevastopol.

On approaching the Dardanelles from the passage inside Tenedos, which is decidedly the best, the directions generally given for avoiding the shoals off the Rabbit Islands are not good, excepting with reference to the tumuli on the Troy shore, as a mark to pass clear to the northward of them, for the marks cannot be made out. But these shoals must by no means be passed in this direction, without giving them a very wide berth, as the current sets strong over them out of the Dardanelles; and if a ship be obliged to go to the northward of them, the Castle of Europe must be brought to such a bearing as to leave no doubt upon the subject.

The shoal off Cape Janissary extends considerably farther out than is supposed. I have been in 3¼ fathoms, I think fully a mile from the windmills, bearing about S. A large ship should borrow well over to the Castle of Europe, and, on the least appearance of discoloured water, should never neglect the lead.

In directing a ship's progress in such a navigation as the Dardanelles and Bosphorus, I conceive that a reference to the compass is unnecessary, and worse than useless; a course may be right, and rendered quite otherwise in a few minutes, by a small sheer in steering against such currents as these: no one should ever think of navigating these channels in the dark; where, indeed, if it is not blowing a gale, it is generally calm. A distinct sight of the shore is absolutely necessary for passing them in safety; therefore I leave all courses and distances out of the question, beyond remarking generally, that the whole distance of the passage of the Dardanelles is fifty miles, about N.E. (true;) being fourteen miles from between the first castles to those of the Dardanelles, twenty-three from thence to Galipoli, and thirteen from that bay to the entrance of the sea of Marmara, with deep water throughout, except where anchorage or shoals will be pointed out.

Having entered between the first castles, a vessel may proceed upwards with a strong southerly wind, keeping mid-channel; but, as it is of importance to pass this strait as quickly as possible, to preserve day-light, and on account of the great uncertainty of the direction of a southerly wind, it becomes necessary to know how to take advantage of the counter-currents, and slacks, and to be informed of the anchorages, in the event of the wind becoming contrary, or the approach of night. It is as well here to observe, that the castles have frequently fired upon vessels attempting to pass in the night.

Having therefore fairly entered the channel, by edging over to the Asiatic shore, a slack, or generally a counter-current, will be found (sometimes a considerable one) setting up the strait as far as the point commonly called by the English "Barber's Point." Point Barbiere, however, upon reference to the chart, will be found higher up than the point generally so called; which is the point, off which the new charts very properly indicate a spit, or sand, extending a considerable distance to the S.S.W. The slack, or current, will generally enable a ship easily to work up as far as this sand. Any where between the entrance of the straits and this point, a vessel may anchor on the Asiatic side; but the best places are off some white spots, or cliffs, described in the charts, or in a bay above them, and below the sandy point, in 10, 12, or 15 fathoms, distant one-third to one-half a mile from the shore, good holding ground. If compelled to anchor lower down, the water will generally be found deeper, and a vessel may probably get nearer the shore than is safe, in twenty fathoms.

In working up this part of the Dardanelles, care must be taken in approaching the shore, as many spots of foul ground, and shoals, run off a short distance; these are, however, generally easily seen, and with ordinary precaution there is no danger. Nearly all along this shore, and especially in the neighbourhood of the white cliffs, are fountains close to the beach, for procuring fresh water, and villages where poultry may be obtained, which is not generally known.

On approaching the sandy point above described, care must be taken not to get *at the back of the spit*. It may generally be seen very clearly, but sometimes not; and then, the direction in which it runs off from the point, must be the guide.

The safest course from here is to sheer over to the other side, in doing which, a vessel will meet the current running very strongly. This is certainly the worst part of the Dardanelles to get through; but pretty close over on the European side, a slack will again be found, after passing the valley, above which stands "Selvelequevi." The charts lay down a bank, along this shore; but if there be any shoal water upon it, it is much nearer to the land, than any one would think of going. Proceeding in this direction, a vessel will soon arrive off the

European castle of the Dardanelles; off which there is a shoal, not extending far out, immediately off the castle: I have passed within a cable's length of the castle, without getting bottom with the hand-lead; but the shoal runs off from the point in a southerly direction; and must be avoided, *by keeping the reach above well open as the castle is approached*; the anchorage just below this shoal, as described in the charts, is good, and in case of the wind failing, must be adopted; as a great point is attained, in having got past the worst of the current.

The course along the Asiatic side may also be taken, after leaving the neighbourhood of the white cliffs; but it is not so free from danger, it is more circuitous, and there seems to be doubt, whether a rock with nine feet over it, does not exist in this route: if, therefore, a ship comes up on that side, she must not approach too near to the shore; and, having occasion to anchor, may get into ten or twelve fathoms in a very good berth, any where between a place called "Cabanas," and the castle of Asia.

Having passed the castles, which on either side may be done at a moderate distance; (and where, according to present arrangements, a vessel is not boarded, and therefore need not heave to;) there is good anchorage for a small vessel, in a little bay immediately above the castle of Asia, or better further on, (on the same side,) at a place called "Captan Baxa," in ten or twelve fathoms quite out of the current. In running up this short reach, nothing further is necessary to guard against, than the shoal off point Nagara, which in fine weather may be readily seen, *and must at all events be guarded against*. I consider it to extend, both farther, and in a more westerly direction, than the charts or directions describe; there is no beacon upon it, as is stated.

Maida, or Maita, in the opposite bight, in my opinion, is not a desirable place to anchor at; although, it is said, that vessels frequently do anchor there. Having passed point Nagara, the difficulty of the current is surmounted, with the exception of the narrow channel off Galipoli; and a handy vessel may easily beat up as far as that place, especially by keeping over on the Asiatic side, where slack water will be found throughout the whole distance, and in many places a very sensible current in her favour. Great care must be taken when standing in, to keep the lead going; especially in the first part of this passage, at the back of point Nagara, just above Abidos. The water there is shoal to a very considerable distance from the land; I was in three fathoms rocky bottom, at least three times as far as the charts lay down the bank; but with care, a vessel may work all the way upon this side, (anchoring any where,) as far as "Lamsaki;" where, unless she is a smart vessel, she must wait a wind to pass the strait above; or she may run over to "Galipoli," and anchor there, if preferred: "Lamsaki," is, however, better to get under way from, should the wind suddenly come up strong. At "Galipoli" I have found some difficulty under such circumstances, having anchored near the town; "Galipoli bay," is, however, I believe, free from danger; I have worked all over it, and I cannot understand the description given in Norie's book, upon the authority of an officer of His Majesty's ship Rifleman, of some danger existing in this bay, which is always understood as a safe place, with all winds, and without shoal, or hidden danger in it.

In running up, after having passed point Nagara, it is a very common practice to keep over to the European side: and with a fresh fair wind, it is matter, perhaps, of indifference. There are places on this side to anchor at as marked in the charts; and there are shoal spots extending from some of the points, to be guarded against; but these may generally easily be seen. It is, however, easier to get up on the Asiatic side, and, should the wind fail, anchorage may immediately be had; whereas, by proceeding up on the European side, mostly in the strength of the current, it frequently happens, on falling calm, that a ship drifts a long way down, before she can find anchorage.

In passing Galipoli, when you have gone by the ledge of rocks at the back of the town; keep along the European side, to avoid the current. *The rocks at the back of Galipoli, which may generally be seen, must be well guarded against, especially in beating.* I have worked up this part of the Dardanelles into the sea of Marmara, keeping the lead going when standing in, although there is no danger whatever; I doubt the existence of the shoal marked in the charts. 'A ship has no business on the other side; therefore, any dangers supposed to exist there, are not worth considering. In sailing either up or down, they are nearer the shore than any one would approach.

THE SEA OF MARMARA.

In sailing through to the sea of Marmara, no directions are necessary; the chart is sufficient for all purposes. In beating through, it is best to keep the larboard shore on board, to avoid the stream of currents setting from the Bosphorus; and along this shore anchorage may be had, if necessary. Generally speaking, wherever there is a town, a ship may ride with N.N.E. or even E. winds; and when up as far as Selevria, under any projecting point along shore; or, if blowing very hard from the eastward, she may run under the lee of the island of Marmara, or under the islands to the S. of Marmara, or under the Isthmus of Cyziko: these latter are all excellent anchorages. The directions to pass to the southward of the island of Marmara in winter, are only calculated to embarrass. If a ship, having anchored any where to the S.W. of this island, in getting under way, could make this a shorter route, it would be adopted, and not otherwise.

THE BOSPHORUS.

On nearing Constantinople, having passed Point Stephanos, (*to which a very wide berth must be given,*) a ship must approach the western shore, to avoid the current running out of the Bosphorus. If the wind be fair, she may steer round the Seraglio point at about mid-channel. If she goes too near the point, a very strong current will be found directly off it, setting into the harbour with great velocity amongst the shipping on the Constantinople side, before she will have time to shorten sail. Navigators, unaware of this, with a strong south wind, have been obliged to run on shore, to avoid further damage. It is, therefore, better to keep mid-channel, until the harbour is quite clear, and then to steer over towards the Artillery Wharf at Tophana. By doing this, the rush of water up the harbour will be avoided, and there will be sufficient time to take in sail, and to choose an anchorage.

Should, however, the wind be north when above Point Stephano, a tolerably smart ship may work up into the harbour; by beating up, in the first instance along the west shore, close up to Constantinople, and then standing directly over to the other side, where she must work up along the Scutari shore, making short boards, and keeping the lead going when standing in; if she can reach Leander's Tower, with a brisk wind she will fetch over the stream again, into the harbour.

Ships that cannot beat to windward, will often work up along the Scutari shore; and having reached Leander's Tower, may make sail, and fetch across. In either case they must keep well to windward, to avoid the current setting up the harbour above mentioned. In doing so, they will find the current under their lee bow, setting right *out* of the harbour, up the Bosphorus. Coming in against this current gives time: if a ship is too heavy, and cannot work up, nor make sail across the currents after warping up, she must remain at anchor at the back of the town, in eleven or twelve fathoms, and wait a wind.

It is of great importance, either in entering, or leaving Constantinople, to understand the nature and direction of the currents. The stream, coming down the Bosphorus, sets directly upon the Seraglio Point; it there divides: the great body of the water running, with considerable velocity, along the Seraglio walls, into the sea of Marmara; and a portion of it running violently up the harbour along the Constantinople side. The distance which this current runs up the harbour, varies; but generally, I consider, that it does not extend far (at least perceptibly) beyond abreast of the Custom House Wharf at Tophana. There it meets with the waters of the harbour, already elevated by the resistance this current presents to the escape of the supply from above, and finds its way out by the other side; forming a current running *out*, often with considerable rapidity, past the Custom House Wharf, and along the Tophana shore, up the Bosphorus, on the European side, as far as Arnoudkeni. It sets directly upon the point of Efendi Bornou, and off into the stream, at the commencement of what is called the Devil's Current; along with which, it comes again down the Bosphorus. These two currents in the harbour, the one setting up and the other down, leave between them an eddy; in which, it is impossible to keep a ship steady at her anchor for a moment; and a clear anchor cannot be insured for five minutes. In this space, also, the bottom is so loose, that the anchor will not hold; and a ship will be continually driving, without any apparent cause. It is, therefore, better to go higher up, and get into the tiers made fast on shore, or alongside the Custom House Quay, or moored head and stern on the Constantinople side. The harbour is deep throughout, and the anchorage is generally in twenty fathoms.

To proceed up the Bosphorus, the current above described, points out the course to be observed as far as Arnoudkeni. A small handy vessel may easily work up; or, by taking advantage of the calms early in a morning, she may be towed up. There are a few shoals in this part, but they are generally pointed out by stakes; these being so placed, as often to form a railing enclosing the whole shoal. In beating up, a vessel should stand off to where the two currents join; which will readily be perceived. There is no danger which is not clearly marked out, as far as Ortakeni, on the European side. Off the point of this place, there is a shoal, which, however, does not extend above twenty yards: in working up, it will be necessary, off this point, to make very short boards. No stream upwards is here perceptible with a north wind; the surface being probably affected by the wind down, though the current is certainly going up underneath. Short boards must be made till the next point is passed above Ortakeni; immediately off which, the current is affected in the same manner as off Ortakeni; and I have found this point the worst part to beat round. Here a line may be run on shore, and a vessel may track up, if preferred; or having worked round to the extent of fifty yards, the current will again be found running up strong, and continuing all the way to the point of Efendi Bornou, as before stated.

After passing the last point described as difficult to get round, two shoals will be seen nearly dry; the first having a stone pillar upon it. They may both be passed inside; but the uppermost of the two runs off shoal some way, in a S.W. direction; in beating, it is therefore better to pass outside of this one, and perhaps the first also. Having arrived at Arnoudkeni, a vessel may anchor in fourteen fathoms, and her stern should be hauled close to the shore; or, if few vessels be there, room will be found to make fast alongside the wharf, without letting go an anchor. If the wind fails in this passage, the anchorage just below the Sultan's Summer Palace is good, or a vessel can bring up at Ortakeni, which is a snug little berth, or higher up she may make fast alongside the wharfs; here she must wait for a south wind, or track and warp up round Efendi Bornou, and across the bay of Bebeck, which, however, is not to be recommended for a heavy ship.

In proceeding from Arnoudkeni with a south wind, be careful not to be set upon the point of Efendi Bornou; it is best to edge over at once to the Asiatic side, and, sailing up near the shore, until you open the castle of Anadoly Hissar, then sheer over again to the European side; and you will fetch a large burial ground, below the castle of Roumely Hissar; you will now proceed close along this shore for some way.

Ships, sometimes on leaving Arnoudkeni, sail up the European side; but here the current is difficult to stem, unless with a fresh breeze; and in Bebeck bay, which will soon be opened. In sailing along the wharf is a shoal, marked out by stakes: but the fact is, that the whole of this bay is shoal; and you will get on shore, if you keep along the wharf after well opening it. It is better, therefore, to avoid Bebeck bay altogether, and sheer over to the other side, as already directed.

A vessel should continue sailing up the European side, past the castle of Roumely Hissar, as near as convenient, till, having got sight of the bends which the channel takes into bays, (on the same side,) as far as Yeni-keni; a course must be shaped direct for this last-named point; or, at all events, a moderate berth should be given to the shore, as deep water does not extend near it in the bights; and, off the fine little anchorage at Stenia is shoal water at its entrance, on both sides.

Approaching Yeni-keni, there is good anchorage in eight or nine fathoms, a good distance from the shore: if the wind fails before reaching this, a vessel may sheer alongside the wharfs all the way from the burial-ground below Roumely Hissar, except in the bights, where anchorage will be found. Having arrived off Yeni-keni, *as the reach above is opened, a vessel must sheer off, and give the shore a good berth*, as a shoal lies immediately round this point, to the north, extending some distance, and with a large ship must not be approached within at least two cables' length. It will be as well not to approach the shore nearer, till abreast of a battery a little below Tarapia, and then to steer at a moderate distance from it for Bouyuckdere, where there is excellent anchorage, in five to ten fathoms, all along the village. Should the wind fail, a vessel may go into the little harbour of Tarapia, or, what is better, may sheer over to the other side, where there is excellent anchorage off the Sultan's Valley, just above Beykos: a vessel may tow up to this anchorage in a calm for a considerable way from below it, where she may ride in five fathoms, and have a rope on shore to the trees. It is here that the British frigate lays that attends the ambassador, just off a large building lately erected as a tanning establishment, under the superintendence of an Englishman.

From this anchorage, if a vessel start with a strong south wind, she should steer over to Tarapia, and proceed round by Buckdere, to avoid the shoals, which are very extensive on the Asiatic side; but it is often advisable to pass to the eastward of these shoals: first, in calm mornings, or light nights, a ship may be towed through this channel to the battery, which must be passed, to open the Black Sea. (I see no name on the chart by which otherwise to designate this point.) From hence, by tracking and towing during the calms, a vessel may get as far as the castle of Anadolisshar, and be ready to slip out into the Black Sea with the first slant of wind; or, having sailed in this route till opening the Black Sea, (as happened to me,) and the wind coming down, a smart vessel may work out.

In passing within these shoals, keep in eleven or twelve fathoms, borrowing upon the shore. These shoals are not laid down correctly in any chart that I have seen: in the last new charts they are something too far to the eastward. To pass round them, it is only necessary, in going either up or down, to keep well over to Bouyuckdere; and *to the westward of a line drawn from the north end of this village to Yeni-keni*, will be a safe course to clear their western edge.

In proceeding for the Black Sea, and having passed the castle of Roumely Hissar, a bank will be seen on the same side, just awash, on which there is a stone pillar. There is a further danger, but little known, and is mentioned in Norie's book by the master of H.M. ship Rifleman; it is not, however, marked on the new charts.

An English ship, some years ago, having come in from the Black Sea, and anchored just below the castle of Anadolisshar, getting under way, and proceeding down along the Asiatic side, struck upon this danger, which the master described as a rock off Kavack: the exact position of it, I do not know; there is no necessity to approach the supposed situation of it, except a ship is beating, or towing, or tracking up, in which case it must be guarded against. The master of H.M. ship Rifleman describes it to lie one-fourth of a mile from the shore, and opposite a large fortress.

In her further progress out to the Black Sea, a vessel should keep along the European side: the current is slack there, and there is good anchorage all the way to the southermost castle; whereas the other side is mostly deep water, (though not so described in the late charts;) you are more likely to get becalmed under very high land, and there is no safe anchorage.

In coming in from the Black Sea, avoid the shoals as described in the course up, and then observe that the opposite sides of the channel you have chosen in your progress up are *generally* the best passages down, to take advantage of the currents; and when within a mile or two of Constantinople, according to the strength of the wind, sheer over to the European side, where you will meet the current, as already stated.

If only intending to wait for a firman, it is best to bring up a little below the Sultan's Summer Palace, where you will find fountains abreast of you, to fill up the water. The extent of the Bosphorus is about sixteen miles, its general direction about N.N.E. and S.S.W. (true.) In working down, there appears to be no shoals to guard against, but what have already been noticed, except on the Asiatic side, opposite to Stenia, where the shore must not be approached too close; but in working down, a ship would naturally be kept making short boards in the strength of the current, which would avoid every shoal in the whole extent of the channel, without a knowledge of them.

The current of the Bosphorus runs at all times down with great strength; and in that part denominated "the Devil's Current" it is hardly possible that any thing but a cutter of the finest construction can beat against it: I have, however, seen an English gentleman's yacht do so, though I apprehend that the current might then want something of its usual force. I have certainly seen the stream running down at this point at least five, and perhaps sometimes nearly six knots; the velocity however is sensibly checked at times, though I must confess that I have never witnessed it running with any thing short of great rapidity. Some persons pretend to say that it is entirely stopped at times; and I have even heard it stated that it sometimes runs up, but this is clearly impossible ever to happen. The Black Sea must of course be very considerably higher than that of Marmara, as this latter is above the waters of the Archipelago, or the current would not run down through the channels between them in the way that it does; to check it at all, something like an equalization of the heights of these different seas must be presumed on, which would either overflow all the low land about the entrance of the Dardanelles, or the Black Sea must become so much exhausted of its waters, or deprived of its usual supply to such an amount, as would leave the Bosphorus materially diminished in height; whereas neither of these cases ever occurs to any extent; perhaps two feet is as much as any one has ever obser this difference in height to amount to, and that rarely; which, though s to account for a trifling check in the velocity of this current, yet lea declivity in the whole extent of the stream nearly the same. My ob of the height of the water in the Black Sea leads me to believe that rally during summer from two to three fathoms lower than in winter

A strong southerly gale in the Archipelago, sweeping over the rmara, combined with what may by chance happen at the same t e sea being unusually low at the north entrance of the Bosphorus, no doubt occasionally occurs to check the rapidity of the current; and it must be this combination which produces the greatest effect that is ever witnessed in the currents of the Bosphorus and Dardanelles; and should this strong southerly gale immediately succeed a two or three days' continuance of a heavy gale from the opposite quarter, the effect will be more perceptible. I have witnessed a sensible check in the velocity of the current, (especially in the Dardanelles,) having left Constantinople immediately after three days' extraordinary heavy gale from the north, in September, (when the waters were generally low, before the autumn rains had replenished the river:) the effects of this gale forced an unusual quantity of water out of these channels, and it was immediately succeeded by south winds, (though light,) and in coming through the Sea of Marmara down to the Dardanelles, I could not but perceive an evident abatement of the usual currents. It is quite clear, in fact, that there is always a very rapid stream to be encountered in these passages; and this difficulty is increased by the prevailing winds, which blow in the same direction with the current for at least ten months out of the twelve. The wind may be considered, as a general rule, most variable about the equinoxes, and most constantly from the north during the summer months; (these observations on the winds apply generally to the Archipelago, but most particularly to the Dardanelles, up to the Black Sea, and part of that also included;) and that the change from a north to a south wind mostly (indeed generally) happens at new and full moons; this change being preceded sometimes by rain, but more frequently by a very clear calm night, with very heavy dew, and the south wind rarely lasting more than two or three days, except about the equinoxes, when it will often last longer. Commencing a few hours after sun-rise—at times it will come up very fresh at sun-rise, though rarely—it will, however, often blow for months together both in winter and summer from the northward, without any change whatever, abating its force during the nights; and in fine weather, and nearly always in summer, a calm lasts all night.

Gales during the winter almost always commence at sun-rise, and rarely last with much force beyond sun-set; but if longer, the weather is very bad. A light south wind will sometimes commence in the afternoon; and in this case the great probability is, that it will fly round to the north at midnight, and blow hard. Summer gales increase during the day, and lull as the sun goes down; the north winds, or those blowing down the Bosphorus and Dardanelles, are very fresh generally during the day, while the sun has much power.

It will frequently happen that a south wind is blowing at the entrances of the Bosphorus and Dardanelles, extending only a short way up, when there will be a small space of perfect calm, and, above that, a strong wind down. A person sailing about the extremes of these winds, will see ships coming the opposite way with studding sails set on both sides. Under such circumstances, if going up, you may take it for next to certain, if you see the north wind is fresh above, that your wind will fail you; and when you approach the calm, betwixt the two, the sooner you get your studding-sails in, and prepare to [illegible], or make fast to the shore, the better, unless you are in a situation to [illegible]. The south wind coming up, at first, has often to combat the wind down [illegible]s manner for two or three days, (every day reaching further up,) before it extends right through, and frequently does not succeed in forcing its way at all, before the north wind resumes its almost constant course; but it is a fair indication of a chance being afforded of making your passage, and you must therefore take advantage of it, to get as far as you can each day while it lasts.

TIDE-TABLE FOR MARCH, 1833.

Mean Time.

Week Day	Month Day	PLYMOUTH *Dock Yard.*				PORTSMH. *Dock Yard.*				SHEERNESS *Dock Yard.*				LONDON *Bridge.*				ABERDEEN.				LEITH.				Month Day	☽'s Age at Noon.
		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.			
		h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.		
F.	1	....		0	35	6	24	7	8	7	34	8	22	8	20	9	3	8	32	9	17	10	7	10	52	1	9·8
Sat.	2	1	23	2	7	7	50	8	31	9	13	9	54	9	55	10	38	9	57	10	32	11	32	....		2	10·8
S.	3	2	47	3	26	9	8	9	41	10	32	11	4	11	22	....		11	4	11	32	0	7	0	39	3	11·8
M.	4	3	58	4	26	10	10	10	37	11	31	11	57	0	4	0	39	11	58	....		1	7	1	33	4	12·8
Tu.	5	4	52	5	15	11	1	11	23	....		0	22	1	10	1	35	0	23	0	47	1	58	2	22	5	13·8
W.	6	5	39	6	2	11	46	....		0	45	1	8	2	5	2	34	1	8	1	29	2	43	3	4	6	Ful
Th.	7	6	23	6	39	0	8	0	30	1	27	1	40	2	57	3	18	1	51	2	12	3	26	3	47	7	15·8
F.	8	7	0	7	18	0	49	1	9	2	5	2	23	3	41	4	4	2	31	2	51	4	6	4	26	8	16·8
Sat.	9	7	36	7	53	1	28	1	47	2	41	3	0	4	23	4	41	3	10	3	28	4	45	5	3	9	17·8
S.	10	8	11	8	29	2	9	2	27	3	20	3	41	4	57	5	14	3	47	4	7	5	22	5	42	10	18·8
M.	11	8	48	9	8	2	48	3	10	4	1	4	21	5	31	5	47	4	27	4	48	6	2	6	23	11	19·8
Tu.	12	9	29	9	53	3	33	3	56	4	42	5	6	6	1	6	18	5	11	5	37	6	46	7	12	12	20·8
W.	13	10	19	10	49	4	23	4	53	5	31	5	59	6	40	7	3	6	7	6	43	7	42	8	18	13	LQ
Th.	14	11	24	....		5	25	6	3	6	33	7	6	7	28	7	59	7	23	8	5	8	58	9	40	14	22·8
F.	15	0	3	0	46	6	41	7	17	7	44	8	24	8	39	9	31	8	48	9	28	10	23	11	3	15	23·8
Sat.	16	1	26	2	0	7	52	8	25	9	5	9	41	10	24	11	7	10	4	10	34	11	39	....		16	24·8
S.	17	2	33	3	4	8	55	9	22	10	11	10	37	11	43	....		11	1	11	23	0	9	0	36	17	25·8
M.	18	3	31	3	55	9	46	10	7	11	1	11	20	0	16	0	45	11	44	....		0	58	1	19	18	26·8
Tu.	19	4	15	4	35	10	26	10	45	11	39	11	59	1	9	1	29	0	3	0	21	1	38	1	56	19	27·8
W.	20	4	54	5	12	11	3	11	20	....		0	18	1	48	2	4	0	38	0	53	2	13	2	28	20	28·8
Th.	21	5	29	5	47	11	36	11	54	0	35	0	54	2	21	2	40	1	8	1	23	2	43	2	58	21	N M
F.	22	6	4	6	22	....		0	11	1	10	1	26	2	56	3	11	1	38	1	52	3	13	3	27	22	1
Sat.	23	6	37	6	53	0	28	0	45	1	42	1	58	3	26	3	40	2	7	2	22	3	42	3	57	23	2
S.	24	7	8	7	24	1	2	1	18	2	13	2	29	3	57	4	11	2	38	2	54	4	13	4	29	24	3
M.	25	7	40	7	58	1	35	1	52	2	46	3	5	4	26	4	41	3	11	3	30	4	46	5	5	25	4
Tu.	26	8	16	8	35	2	12	2	32	3	25	3	47	4	55	5	14	3	50	4	12	5	25	5	47	26	5
W.	27	8	56	9	18	2	55	3	19	4	9	4	32	5	28	5	46	4	36	5	2	6	11	6	37	27	6
Th.	28	9	44	10	11	3	44	4	13	4	57	5	24	6	6	6	29	5	31	6	6	7	6	7	41	28	FQ
F.	29	10	45	11	27	4	44	5	22	5	56	6	35	6	56	7	28	6	45	7	28	8	20	9	3	29	8
Sat.	30	....		0	18	6	7	6	53	7	19	8	5	8	6	8	56	8	16	9	1	9	51	10	36	30	9
Su.	31	1	6	1	50	7	35	8	15	8	53	9	37	9	49	10	39	9	42	10	18	11	17	11	53	31	10

The times of high-water, nearly, at other places on the coast, may be found with the assistance of the above table within certain limits. Thus, the times in the Plymouth-Dock column are to be used for all places between the Land's End and Lyme Cob; and those in the Portsmouth column, for all places between Portland Bill and Beachy Head; by adding or subtracting the time opposite each place, according to the sign + or —.

The times of high-water at Plymouth Dock-Yard are to be used with the difference against the following places, to find the time of high-water there on the same day:—

	h. m.		h. m.
Mounts Bay and Lizard . . .	— 1 3	Eddystone	— 0 18
Falmouth Harbour	— 0 18	Dartmouth and Torbay . . .	+ 0 27
Fowey Harbour	— 0 18	Exmouth	+ 0 52
Cawsand Bay	— 0 10	Lyme Cob	+ 0 27

The times of high-water at Portsmouth Dock-Yard are to be used as above, for the following places:—

	h. m.		h. m.
Portland Bill	— 6 10	Cowes	— 0 55
Weymouth Harbour	— 5 10	Southampton	— 1 0
Christchurch and Poole Harbours	— 2 50	Bembridge Point	— 0 40
Needles Point	— 1 55	Selsea and Arundel Harbours .	+ 0 5
Hurst Chamber	— 1 40	Shoreham Harbour	— 0 25
Lymington	— 1 25	Beachy Head	— 1 25

VOYAGES AND MARITIME PAPERS.

I.—LIEUT. DRUMMOND'S METHOD OF ILLUMINATING LIGHT-HOUSES.

It is now some time since Lieut. T. Drummond, of the Royal Engineers, directed his attention to the method of illuminating light-houses, with the view of improving it. Although he succeeded in discovering the means of producing a light unrivalled in splendour, and shewed how it might be introduced into these establishments, we do not find that it has been yet adopted. But considering the vast importance of his discovery, some account of it may not be uninteresting to our readers, and we shall, therefore, avail ourselves of his paper on this subject, read before the Royal Society to explain the process.

Fig. I. of the accompanying plate represents the lamp. The two gases, oxygen and hydrogen, employed by Lieutenant Drummond, proceeding from separate gasometers, enter at *o* and *h*, but do not mix till they arrive at the small chamber *c*, of which fig. 2. is a section: into this chamber the oxygen gas from the inner tube is projected horizontally through a series of very small apertures, and the hydrogen gas rises vertically through a series of similar apertures at *d*. The united gases then pass through two or three pieces of wire-gauze placed at *e*, and, being thus thoroughly mixed, issue through the two jets against the ball *b*. To prevent the wasting of the ball opposite the two jets, and at the same time to diffuse the heat more equably, it is made to revolve once in a minute, by means of a movement placed underneath the plate *m*, and with which the wire *f*, carrying the ball and passing through the stem, is connected. Notwithstanding, however, this arrangement, the effect of the heat is such as gradually to cut a deep groove in the ball, so that at the end of about 45 minutes it becomes necessary to change it*. In a light-house, where it is of essential consequence to maintain a constant light, it would be unsafe to entrust this to an attendant, and hence the necessity of devising some means for remedying this inconvenience. The apparatus represented by fig. 3. is designed for this purpose, and is drawn in the manner in which it is applied to a reflector, the outline of which is shown.

The wire *a b* passes through the focus of the reflector, and upon it are placed the number of balls at A, required for any given time; these, by means of the shears *s*, as shown in fig. 4, are admitted between the plates *p p*, and thence permitted to fall in succession to the focus. No. 1. represents the focal ball; about two minutes before the change, the ball 3, falls into the position 2, where it

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* When a cylinder is used instead of a ball, a ring of minute crystals is found adhering to the surface above and below this groove.

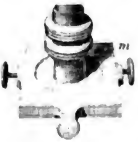
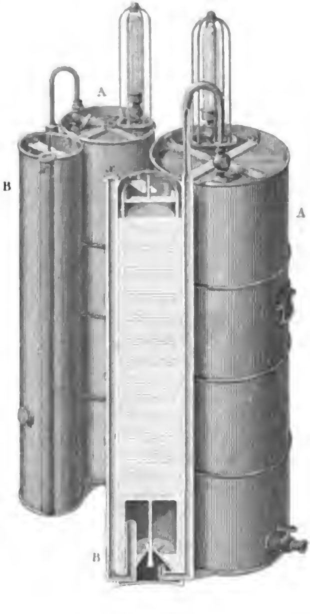


Fig. 5.

Fig. 6



becomes gradually heated. At the end of that time, the curved support *t*, moving on a pivot, is thrown into the position represented by the outline, by the momentary descent of the ring *r*, which, receiving an impulse from the weight *w*, acts upon the extremity *u* of the support. No. 1. falls, but is prevented from descending more than its own diameter by the loop *l*, and No. 2. following it, occupies the focus. The support *t*, being immediately released, returns by the action of a spring to its former position, retains No. 2, and suffers No. 1. to escape through the loop into the cistern.

The wire *a b* and the support *t* revolve together, and carry round the focal ball, which is ignited as in fig. 1. by the two jets *z z*. These jets, which are moveable round the joints *d d*, enter through small apertures cut in the sides of the reflector, and are easily adjusted to the proper distance from the ball.

Wherever the light is required to be diffused equally round, the renewal of the lime may be effected still more easily, by using a cylinder as represented in fig. 5, instead of a ball, which being gradually raised while revolving, brings fresh portions in succession opposite the jets. In a reflector, a cylinder occasions partial shadows at the top and bottom; still, however, the simplicity and certainty with which it may be renewed will probably entitle it to a preference even in this case.

The apparatus for supplying the lamps with gas is represented in fig. 6. It consists of two strong cylinders, A, 3 feet high, the one for oxygen, the other for hydrogen: the gas is compressed two or three times in each, the latter by being generated under pressure, the former by being pumped in. To each of these gas-holders, a governor, B, is attached, of one of which a section is shown: by which means, whatever be the variation of pressure in the gas-holder, provided it exceed that of the governor, the gas will issue at *x* with a uniform and constant stream; in the present instance under a pressure of 30 inches of water. Although this apparatus was of great use in the experiments at the Trinity House, and subsequently at Purfleet, by enabling Lieut. Drummond to keep within a small compass a supply of gas sufficient for two hours' consumption, and even to renew it without impeding the progress of the experiments, yet it may be remarked, that on a large scale the gasometers required would be much more simple, since compression would no longer be required. This apparatus was made by Mr. Samuel Crosley, the ingenious inventor of the gas-governor.

The first experiments were on the illuminating powers of the different lights, independently of the lenses or reflectors with which they are generally used. The method of shadows and that of equally illuminated surfaces, both depending on the same principle, but requiring different instruments, were employed;[*] the former after the manner of, and with all the precautions recommended by, Count Rumford;[†] the latter, according to the arrangements proposed by Mr. Ritchie,[‡] who on this occasion made several experiments with his own instruments, and without being acquainted with the results previously obtained. The standard used was an excellent Argand lamp $\frac{7}{8}$ inch in diameter, supplied with the finest spermaceti oil, and capable of supporting a flame $1\frac{3}{4}$ inch in height. The following results were obtained:

			Standard.		Wax candles, $1\frac{1}{8}$ inch diam., the wick consisting of 40 threads.
French lamp, Mean of	5	observations by shadows - - - - - - -	1	- - -	= 9.1
————————	9	———————— - - - - - - -	8.7	10.4[§]	= 94.6
————————	6	——— by illumination surfaces - - -	12.1		
Oil gas burner, same diam. as standard	4	——— by shadows - - - - - - - -	0.95		= 8.7
Lime-ball or cylinder $\frac{3}{8}$ inch diam.	2	———————— - - - - - - - -	9.2	13.5	=122.9
	2	———————— - - - - - - - -	10.4		
	4	——— by illuminated surfaces - - -	18.6		
	10	————————————————	16.0		

The light of the ball, depending on the intensity of the heat, is very different at different parts, being greatest opposite the jets, and diminishing towards the sides. The mean of the greatest and least intensity is taken in the above Table; and moreover, though the greater number of observations might appear to warrant giving greater weight to their results, yet, being made on the same day, and under the same circumstances, it was found that the results seldom differed, whatever might be the number of observations; hence the arithmetical mean is taken, and this remarkable result is obtained,—that the light emitted by a lime-ball only $\frac{3}{8}$ of an inch in diameter, heated by two jets, is equal to 13 Argand lamps.

With respect to the intensity or intrinsic brightness of the different lights, the property on which their utility in light-houses more immediately depends, the following results have been found:

The intensity of				Mean.	
French lamp, Mean of	11	observations by shadows - - - - -	= 4.1	4.0	times the intensity of the Standard.
————————	8	———————— - - - - -	= 3.8		
Oil gas - - - - - -	6	———————— - - - - -	= 0.85[‖]		
Lime - - - - - -	6	———————— - - - - -	= 263.9	264.1	
——— - - - - - -	3	——— by illuminated surfaces -	= 264.4		

These results were obtained by screening the different lights, and then placing equal apertures opposite each, changing the apertures, and taking the mean to destroy the effect of any inaccuracy in size. The intensity of the lime-ball being therefore 264 times that of the Argand lamp, a single reflector illuminated by the former will be equal to 264 reflectors illuminated by the latter; but the divergence of the reflected light, depending upon the size of the luminous body in the focus, will be smaller with the ball than with the lamp, in the proportion of about 3 to 8; hence in such a light-house as that of Beachy Head, 8 reflectors may be substituted for 30, and yet an effect would be produced 26 times greater than that of the present light, the most perfect of its kind in this country.

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[*] Bouguer, Traité d'Optique.

[†] Phil. Trans. 1794, Part I. page 67.

[‡] Phil. Trans. 1825, Part I.

[§] The result given by Fresnel, in the memoir quoted above, considerably exceeds this, being stated at 17 lamps of Carcel.

[‖] This low degree of intensity indicates impurity in the gas.

By similar experiments it was found that the French lens was equal to 9.1 reflectors; and if the effect of the additional lenses and reflectors which ought to accompany it, and which has been estimated at one-seventh, be added, then the lens is equal to 10.4 reflectors. In like manner, therefore, the effect of a single reflector with a lime-ball would be equal to 25 times that of such a combination of lenses.

Such appear to be the singular and important results of the late experiments at the Trinity House, made as they have been with every precaution by different individuals, with different instruments, and unbiassed by the knowledge of each others results. There is no reason to doubt their accuracy; and the comparative appearances of these different lights, when exhibited at a distance of ten miles, to which allusion will be hereafter made, though not admitting of being reduced to numbers, confirm the striking superiority of this method of illumination.

It may now perhaps be asked, At what expense can such a light be maintained? Can the gases by which the requisite heat is produced be procured at such a price as to compete with oil or coal gas? The data which Lieut. Drummond obtained for forming an estimate of the expense of the gases were very scanty, but the quantity consumed was accurately determined; at the same time the consumption of the other lights was also tried, and the results are as follow:

	Consumption in 3½ hours.	Expense per hour.
An Argand lamp seven-eighths of an inch in diameter	1 gill	0.69 penny
The same placed in a reflector	1⅓ gill	0.83 penny
The French lamp	2 qts. ½ pt.	1s. 2½d.

The lime requires 4 cubic feet of hydrogen and 2 of oxygen per hour, and the probable expense is 5d. per hour.

In a revolving light of the first class, containing 30 reflectors, the expense per hour would therefore be about 2s. 1d. If the French method were employed, the increase of light would be $\frac{1}{20}$th, and the expense only 1s. 2½d. per hour. If six reflectors illuminated with lime-balls were used, which would perhaps be sufficient, the probable expense would be 2s. 6d. per hour, and the increase of light 26 times.

If this estimate be erroneous, it will prove to be so in excess: admitting, however, that the expense should, in the first instance, somewhat exceed what has been stated, it may in this as in every similar instance be expected, that after a little experience a considerable reduction would be effected. This is a new source of artificial light, differing from every other at present in use, and the materials by which it is produced are among the most abundant products of nature; but never having yet been applied on a great scale to any practical purpose, it has not hitherto been an object to obtain them in a separate state at a small expense. When this is effected, it will no doubt receive many useful and important practical applications.

Meanwhile, however, the case in question may perhaps be regarded as one where expense ought not to be a primary object of consideration. On all ordinary occasions, the preference of one mode of illumination to another is a question of convenience, luxury, or economy; but in this it assumes a more important character, for it involves to a great extent the preservation of life and property.

To complete the preceding account, it only remains to add a description of the appearances presented by the different lights when exhibited at a distance; and to those who have entered with any degree of interest into the above details, such a description, it is hoped, cannot fail of proving acceptable.

The experiments at the Trinity House being concluded, the whole of the apparatus was removed to Purfleet, where on a knoll of chalk, about 100 feet above the river, a temporary light-house had been erected, and being fitted with the requisite machinery, the different lights were made to revolve in succession, and the appearance which they presented, as well as the duration of the light, were observed from the Trinity Wharf at Blackwall, a distance in a straight line of 10¼ mile.

The four faces of the revolving machine were thus occupied:
No 1. A single reflector 21 inches diameter, 3 inches focal distance, with an Argand lamp.
No. 2. Seven reflectors with ditto.
No. 3. French lens, with its lamp.
No. 4. Single reflector with lime-ball.
The respective lights were accurately placed in focus.

On the evening of the 10th of May, the machine performing one revolution in eight minutes, Captain Pelly of the Trinity House made the following observations on the different lights from the Trinity House Wharf, Blackwall, 10¼ miles distant.

No.	Duration.		Divergence.	Computed maximum Divergence.
	min.	sec.	°	°
1	0	25	17.40	17.81
2	0	25	17.40	17.81
3	0	7	5.17	5.18
4	0	9	6.12	6.7

When No. 4, the reflector lighted with the lime-ball, was turned towards the Wharf, the light was so great that the shadow of the hand and fingers was distinctly visible even on a dark brick wall, while no such effect was discernible when the other lights were turned in the same direction.

In order more justly to estimate their comparative effects, No. 4 was removed to a temporary tent about twenty-five yards to the right of the light-house, as far as the edge of the cliff would permit, and on the evenings of the 25th and 31st May regular series of experiments were made. But we will now give Captain Hall's report to Lieut. Drummond on his invention, precisely in his own words:

"4, St. James's Place, 1st June, 1830.

"My dear Sir,

"You wished me to take particular notice of last night's experiments with the different kinds of lights exhibited at Purfleet, and observed at the Trinity Wharf, Blackwall; but I have little to add to what I told you respecting those on the evening of the 25th instant: indeed it is not within the compass of language to describe accurately the details of such experiments, for it is by ocular evidence alone that their merits can be understood.

"Essentially, the experiments of last evening were the same as those of the 25th, and their effects likewise. The degrees of darkness in the evenings, however, were so different, that some particular results were not the same. The moon last night, being nine or ten days old, lighted up the clouds so much, that even when the moon herself was hid, there was light enough to overpower any shed upon the spot where we stood by your distant illumination: whereas on the 25th, when the night was much darker, the light cast from the temporary light-house at Purfleet, in which your apparatus was fixed, was so great that a distinct shadow was thrown upon the wall by any object interposed. Not the slightest trace of any such shadow, however, could be perceived when your light was extinguished, and any of the other lights were exposed in its place.

"In like manner, on the evening of the 25th it was remarked by all the party at the Trinity Wharf, that, in whatever direction your light was turned, an immense coma, or tail of rays, similar to that produced by a beam of sun-light in a dusty room, but extending several miles in length, was seen to stream off from the spot where we knew the light to be placed, although, owing to the reflector being turned too much on one side, the light itself was not visible.

"Now, last night there was none of this singular appearance visible; but whether this was caused by the presence of the moonlight, or by the absence of the haze and drizzling rain which fell during the evening of the 25th, I cannot say. I had hoped that the appearance alluded to was to prove a constant accompaniment to your light, in which case it might, perhaps, have been turned to account for the purposes of light-houses. If in hazy or foggy weather this curious effect of reflected light from the atmosphere be constant, it may help to point out the position of light-houses, even when the distance of the observer is so great that the curvature of the earth shall render it impossible for him to see the light itself.

"The following experiments tried last light were the same as those of the 25th, and certainly no comparative trials could be more fairly arranged.

"Exp. I. The first light exposed was the single Argand burner with a reflector. This was quite distinctly seen, and all the party admitted it to be a good light. After several minutes this was put out.

"Exp. II. The seven Argand burners were next shown, each in its reflector; and this was manifestly superior to the first; but how much so I cannot say, perhaps four times as conspicuous. Both these lights had an obvious tinge of brown or orange.

"Exp. III. The third light which was exposed, (on the seven Argands being put out,) was that behind the French lens; and I think it was generally admitted by the party present, that this light was whiter and more intense than that from the seven Argands, though the size appeared very much the same.

"Exp. IV. The fourth light was that which you have devised, and which, instead of the clumsy word 'Lime,' ought to bear the name of its discoverer. The Drummond light, then, the instant it was uncovered, elicited a sort of shout of admiration from the whole party, as being something much more brilliant than we had looked for. The light was not only more vivid and conspicuous, but peculiarly remarkable from its exquisite whiteness. Indeed, there seems no great presumption in comparing its splendour to that of the sun; for I am not sure that the eye would be able to look at a disk of such light, if its diameter were made to subtend half a degree.

"The next series of experiments was the most interesting and decisive of all. Each of the lights above enumerated, viz. the single Argand burner, the seven Argands, and the French lens, were exposed, one at a time, in company with your light, in order to try their relative brilliancy.

"First comparative Experiment.—The single Argand burner was first exposed to this comparative ordeal, and nothing could be more pitiable than the figure it cut. Many of the party could not see the Argand light at all; while others could just detect it 'away in a corner,' as some one described it. It was also of a dusky orange tinge, while your light was of the most intense whiteness.

"Second comparative Experiment.—The seven Argand burners were now substituted in place of the single light. All the party could now see both lights, but the superiority was not much less obvious. I really cannot affix a proportion either as to size or brilliancy; but I should not hesitate to say that your light was at least six or eight times as conspicuous; while in brilliancy, or purity, or intensity of light, (for I know not precisely what word to use to describe the extreme whiteness,) the superiority was even more remarkable. All this which I have been describing was expressed, and appeared to be quite as strongly felt by the rest of the company, to the number, I should suppose, of five-and-twenty or thirty persons, who were all closely on the watch.

"Third comparative Experiment.—The next comparative trial was between the French lens and your light. The superiority here was equally undeniable; though the difference in the degree of whiteness was not so remarkable. The French light, however, is so nearly similar to that from the seven Argands, that the comparison of each of them with your light gave nearly the same results, and all equally satisfactory on the score of your discovery.

"Final Experiment.—The flashes with which the experiments concluded were very striking, and might I think be turned to great account in rendering light-houses distinct from one another. The revolutions were not effective, and, as I said before, there was no appearance last night of those enormous comets' tails which swept the horizon on the night of the 25th, to the wonder of all who beheld them: neither could there be detected the slightest trace of any shadow from the light thrown towards us, and I suspect none will ever be seen, when the moon, whether the night be clouded or not, is of so great a magnitude.

"Such is the best account I can give of what we witnessed; and I need only add, that there seemed to be amongst the company but one opinion of the immense superiority of your light over all the others brought into comparison with it.

"I am, &c. "BASIL HALL."

We shall reserve some further observations on Light-houses for a future number.

To the Editor of the Nautical Magazine.

London, February, 1833.

Sir—At a period when, from various authentic returns, there is reason to apprehend that the *foreign* trade of this country, whether in manufactures or shipping, is rapidly on the decline, our colonies increase in national value and importance. Those of British America in particular, whether as presenting a most extensive and progressively increasing market for our manufactures, a wide field for the employment of British shipping, or offering the ready means of relieving a redundant population, and of augmenting the mass of human happiness, claim our particular consideration. With my best thanks for the insertion of my article on the "*Pines of Canada*," in your December number, I again accept with pleasure, the offer of your columns for a few short, but, perhaps, not unimportant observations upon the trade and circumstances of our North American colonies, which I trust will be shortly exhibited more at large by a very talented friend* most intimately acquainted with the subject.

I remain, Sir, your most obedient servant,

Nathaniel Gould.

II.—On the Trade of British America.

It is greatly to be regretted, that in Canada there should exist continued discordances among its population. This may not be the proper place to discuss a matter of so much importance, arising from various causes, of which perhaps the division of the country into two provinces is not the least. By this division, the quarrels, arising from the marked differences in the moral and physical characters, as well as in the language, laws, and religion, of the ancient French population of the lower province, and the more recent British inhabitants of the upper province, are perpetuated instead of amalgamated: and commercial jealousies are also created, in consequence of *both* the ports of entry and the house of assembly (which regulates the duties, &c.) belonging to the less commercial people. These facts are merely stated, to shew the extreme capability of the country, the extent of its resources, and the energy of a large portion of its population, by which, in spite of these and other drawbacks, such progressive and rapid advances in cultivation, wealth, and literature, have been made. If this attempt, limited as it is by the space in which it is necessarily confined, fails to convince those who are sceptical of the advantages accruing to the nation from colonial protection, it will arise not from the real importance belonging to the system, but from the inability of the advocate. It is hoped that it will at least tend to induce a consideration of the subject from those who may have adopted, at second-hand, certain fashionable but novel doctrines, by the adoption of which, one stroke of the pen may inflict an irremediable injury upon various great and important national interests.

To an isolated, densely populated, and energetic people, the possession of colonies is one of the greatest boons of Heaven; and, though to any *great*

Note—By the official return of vessels passing the Sound, it appears that there were 1447 fewer *British* vessels in 1832 than in the preceding year. In the port of London, the arrivals of ships were 1592 less, and in the port of Hull 478 less.

* Henry Bliss, Esq., Commercial Agent for the North American Colonies.

extent emigration has existed for a few years only, its present amount is astonishing to every one who duly considers the subject. In the present day, it is a movement of the people, independent of their rulers—the spontaneous effort of an overgrown people itself; in fact, a measure of necessity rather than discontent. It resembles a stream from an overflowing fountain, which may be guided but cannot be stopped; and the only question now is, how that stream shall be directed so as to be most useful to the emigrants themselves, and to the interests of the mother country; whether, in fact, they shall expatriate themselves from all connection with the land of their fathers, or continue that connection, adding to its resources by their industry, and the consumption of its manufactures, whilst, in return, it secures to them protection for their produce in the home markets.

The astonishing number of 51,254 emigrants arrived at Quebec in the year 1831, viz.:

From Ireland	34,133
—— England and Wales	10,243
—— Scotland	6,354
—— Newfoundland, Halifax, &c.	424
	51,154

Of these, 26,500 are stated to have proceeded to the upper province, and there settled; 17,000 to have remained in the lower province, many of them finding immediate employment on public works, in the lumber trade, and various branches connected with shipping; the remainder, it is presumed, crossed over to the United States. In the last year (1832) nearly 52,000 arrived, and, notwithstanding the severe calamity and affliction attendant on the breaking out of the cholera, which raged there with extreme violence, it is stated upon good authority, that 30,000! have been settled in the upper province alone, while so small a proportion have crossed to the United States that it is thought at least as many have entered the Canadas from thence. The greater numbers, it will be seen, have uniformly proceeded to the upper province, induced thither by the facilities afforded to them, in purchasing and settling on lands, by the *Canada Land Company;* indeed, to the establishment of this company, the rapid improvement and superior energies evinced in the province may be attributed. Assisted also by the zealous interest taken by the governor, Sir John Colborne, in the improvement of the province, and the welfare of the emigrant.

A small tax per head is now payable by the ship-owner to provide a fund for the relief of the absolutely destitute emigrant.

The Montreal Emigrant Society during the last year, forwarded to their destination, or otherwise relieved 10,744 of these poor creatures, at an expense of £2,126. 11*s.* 4*d.*, or 4*s.* 11*d.* per head. Too much praise cannot be bestowed on the exertions of those pure philanthropists who, during a season of such distress and danger, gave up their time, money, and health, to so worthy a purpose. Of this number there were,—English, 2,865—Irish, 6,854—Scotch, 856—Welsh, 169.

Be it remembered that the number here stated are emigrants to *Canada alone*—New Brunswick, Nova Scotia, Prince Edward's Island, and even Newfoundland, not being without such an influx, though to a less extent.

From the habits of life to which the British emigrants have been accustomed, the consumption of British manufactures, teas, and imported goods generally, is much greater in the upper than in the lower province, in proportion to its population, increased as it is in the lower by the adventitious expenditure and consumption of the great number of seamen who stay from one to two months, during the season, at Quebec and Montreal. It is to be regretted, that the intentions of the *British American Land Company* for the lower province have not yet been carried into effect, as, by making roads, constructing bridges, and otherwise offering facilities to emigrants, numerous settlers would be induced to "locate" themselves in that province, within a hundred miles of the two great markets of Quebec and Montreal; thus introducing new wants, new capital, new energies, and, what is most required, *new feelings*, among those inert descendants of the first French dispossessors of the Indians, who have especially assumed to themselves the name of "Canadian."

It is a somewhat curious circumstance that M. Pothier, the commissioner for the lower province for settling the amount of duties, &c. between both, lays claim to a larger proportion than his brother commissioner for the upper province is willing to concede, on the very ground that the lower province was about to receive a large accession of population, &c., from the useful exertions of this projected company.

The general trade of the North American colonies is thus stated:

Arrivals and Clearances of Vessels in the North American Colonies in 1831.[*]

PORTS.	ARRIVALS INWARDS.			CLEARANCES OUTWARDS.		
	Ships.	Tons.	Men.	Ships.	Tons.	Men.
Quebec	1,111	277,844	12,762	1,102	275,673	12,586
St. John's, N. Bruns.	1,708	203,907	10,184	1,710	212,734	10,319
Halifax	1,573	173,392	7,341	1,742	186,824	8,417
St. John's, Newfndld.	845	89,929	5,385	812	86,355	5,021
St. Andrew's	1,106	53,709	3,555	618	52,997	2,926
Prince Edward's Isl.	311	16,123	952	382	22,085	1,201
Total......	6,654	814,904	40,179	6,366	836,668	40,470

Of which nearly one-half is with the United Kingdom, one-fourth between the British American colonies themselves, about one-eighth with foreign countries, and above one-twelfth with our West Indian islands.

Here then is an amount of tonnage, an employment for British capital and British labour, the *possible* loss of which, from any cause, direct or indirect, cannot be contemplated without the apprehending of consequences the most serious to national prosperity.

As it will be impossible, in the space that can be allowed in this work, to give a detail of the trade of *each* particular colony, it must be sufficient to insert that of Quebec; stating, however, that it bears only a proportion of about one-third to the whole, and that each colony has some particular articles of commerce almost peculiar to itself.

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[*] The official returns for 1832 not having arrived, we here give those for 1831, premising that the imports have been about the same.

COMMERCE OF LOWER CANADA.

Imports into Lower Canada, by sea, of the principal articles of Trade and Commerce in 1831 ; *with the number of vessels arrived, &c. Compiled from the Quebec Commercial List of 7th March,* 1832. *To which is added an estimate of the value of said Imports.*

		Vessels.	Tons.	Men.
At Quebec. Vessels with cargoes	541	1,027	263,519	11,992
in ballast	486			
At Gaspé and New Carlisle		84	14,321	774
Total		1,111	277,840	12,766

	Gallons.	Estimated Price.		£.	s.	d.
Wine, Madeira	32699	7	0	11444	13	0
Port	56222	5	6	15461	1	0
Spanish	155627	1	8	13052	5	0
Teneriffe	29029	2	4	3386	14	4
Sicilian	15596	1	8	1299	13	4
Sherry	21886	2	9	3009	6	6
Fayal	532	2	1	55	8	4
Rhenish	424	10	0	212	0	0
Lisbon	13095	2	9	1800	11	3
Cape	10191	2	9	1401	13	6
French	7244	2	6	905	10	0
Pico	5379	3	0	806	17	0
Jamaica Rum	270686	3	0	40602	18	0
Leeward Island	1157507	2	6	144699	12	6
Brandy	64215	5	0	16053	15	0
Gin	73414	4	9	17435	16	6
Whiskey	1507	2	3	169	10	9
Molasses	102166	2	0	10216	12	0
Refined Sugar, lbs.	1084889	0	6	27122	4	6
Muscovado do.	5936146	0	4	98935	15	4
Tea	587171	2	9	80736	8	6
Coffee	119164	0	10	4977	13	4
Leaf Tobacco	119622	0	6	2990	11	0
Manufactured do.	60691	0	7½	1896	11	9
Salt ... minots	324040	0	10	13501	13	4
Ditto ... tons	53					
Value of Merchandise, paying 2½ per cent. *ad valorem* duty,				1317950	11	11
Value of Merchandise, duty free,				25779	5	5
Total, Halifax currency				£1,855,902	13	1

Total Export of the principal Staple Articles from Lower Canada, by sea, in 1831 ; *also the number of vessels cleared, &c. ; with an Estimate of the value of said Exports.*

	Vessels.	Tons.	Men.
Cleared from Quebec	1044	296765	12058
from Gaspé and New Carlisle	57	8774	251
Total	1101	275538	12579

N.B.—Of the Vessels cleared from Quebec, nine were built this year, tonnage 3250 ; and one foreign vessel in ballast, 136 tons, seven men.

		Estimated Price.		£.	s.	d.
Masts and Bowsprits ps.	885	200s.	0d.	8850	0	0
Spars	1758	35s.	0d.	3076	10	0
Oak Timber tons	18672½	40s.	0d.	37345	0	0
Pine do. do.	193765½	15s.	0d.	145324	2	6
Ditto (from Gaspé) ps.	643	15s.	0d.	482	5	0
Ash do. tons	2015	17s.	6d.	1763	2	6
Elm do. do.	10659	17s.	6d.	9326	12	6
Birch, Maple, &c. do.	1308	17s.	6d.	1144	10	0
Standard Staves and Heading ps.	1372648	30*l*.pr.1200ps		34316	4	0
Pipe&Puncheon Staves and Heading ps.	3314593	8*l*. per do.		22097	5	9
Barrel Staves ps.	879116	5*l*. per do.		3662	19	8
Deals, 3 inch	1646795	120s.pr.100ps		98807	14	0
Boards and Planks	107108	90s.	do.	4819	17	2
Ditto (from New Carlisle) feet	10180	3½d. per ft.		31	16	3
Battens ps.	29738	30s. per 100		446	1	4
Lathwood cords	1892	20s.	0d.	1892	0	0
Ashes, Pot, brls. 30153 wt. 131875 cwt. 3 qr. 13 lb.		32s.	6d.	214298	5	8
Do. Pearl, brls. 19763 .. wt. 68474 cwt. 1 qr.		35s.	0d.	110829	18	9
Flour brls.	81114	35s.	0d.	141949	10	0
Do. half do.	348	18s.	6d.	321	18	0
Wheat minots	1329269	6s.	8d.	443089	13	4
Pease do.	7124	3s.	6d.	1246	14	0
Oats do.	35246	2s.	0d.	3524	12	0
Barley do.	11161	3s.	0d.	1674	3	0
Pork barls.	8292	65s.	0d.	26949	0	0
Do. half do.	902	33s.	6d.	1510	17	0
Beef barls.	4351	37s.	6d.	8158	2	6
Do. half do.	1359	20s.	0d.	1359	0	0
Biscuit cwt.	7210	17s.	6d.	6308	15	0
Tobacco, leaf, hhds. 46 lb.	31301	0s.	6d.	782	10	6
Do. (suppose manufactured)	4306	0s.	8d.	143	10	8
Snuff lb.	446	0s.	9d.	16	14	6
Fish Oil gallons	54582	1s.	6d.	4093	13	0
Furs and Peltries				85909	18	8
Vessels built in Lower Canada this year, 9; tons 3250		10*l*.		32500	0	0

Total, Halifax currency...... £1,467,052 16 10

COMMERCE OF MONTREAL.

Statement of Wines, Spirits, and other Articles, entered at the Port of Montreal, from 6th July to 10th October, 1832.

		Duty.		
1354	gallons Madeira	50	15	6
95744	do. Wines	2393	12	0
46308	do. Gin and Brandy	1157	14	0
6535	do. Rum	163	7	6
228	do. Whiskey	2	17	0
212908	lbs. Refined Sugar	887	2	4
5368	do. East India Sugar	11	3	8

		Duty.		
24034 do. 39285 do. 297516 do.	Teas	5886	16	6
5400	packs Cards	45	0	0
291	minots Salt	4	17	0
		10,603	5	6
	British Manufactured Goods, £167,577. 14s. 6d.	4,189	8	10
		14,792	14	4
	Crown duties on Wines, Spirits, and Whiskey, 3453*l*. 4s. 6d. sterling, or in currency, dollar at 4s. 4d.	3,984	14	4
	Gross amount this quarter, Halifax currency	18,777	4	1

It will be well to bear in mind, that the value of the timber shipped at Quebec, as stated at £378,386. 0s. 8d. is only the *first* cost before shipping; to which all charges are to be added, the *freight alone* of square timber paid to the British ship-owner being above twice its first cost! And also, that on *nearly a million and a half of value in British manufactures* only 2½ per cent. duty is collected; such a minimum of duty being no where in existence except in our colonies. The progressive import of *British* manufactures seems to exceed the increase of population. *It has increased above* 40 *per cent. in three years!* In fact, the small population of our North American colonies take a larger amount in our own manufactures of cotton, woollen, hardware, and cutlery, than more than one hundred millions of France, Russia, Prussia, Denmark, Sweden, and Norway!

Of the *real value* of the aggregate imports into, and exports from, the *whole* of the British American colonies, the means of giving an account are not at hand; but the three which we are enabled to exhibit will afford some scale for calculating the values of those of the four others, viz.:

	Imports.	Exports.
Quebec	£1,855,902	£1,467,052
Halifax	1,447,643	827,460
St. John's, New Brunswick	507,184	348,584
Prince Edward's Island	—	—
St. John's, Newfoundland	—	—
St. Andrew's	—	—
Hudson-Bay	—	—

By reference to the tables for *Canada*, it will be seen that the quantity of wheat and flour exported from thence in 1831, was, of the former about 175,000 quarters, and of the latter 81,288 barrels. This produce has greatly increased of late. Wheat and flour have not been articles of export for many years, but agriculture is now making rapid strides in Canada, particularly in the upper province; and although it may be regretted that the exporting merchant has generally been a severe loser by his operations, the agriculturist has reaped the full advantage of high prices, and the protection afforded him in the home market. It is at the same time sufficiently clear, that without the present protection by differential duties on its bread stuffs, that Canada could in no way compete with the foreigners either of Europe or of her own continent. The proximity of the former, the cultivation by serfs, low rate of labour, and lightness of taxation, as well as the superior advantages of climate, and constant access to sea navigation, in the latter, render it impossible. The very knowledge that the *whole* value given from the sowing to the consuming is paid as the wages of labour to our own countrymen is convincing as to the propriety of such protection, even to a greater extent than at present exists; which allows colonial wheat to come in *free* only when the average is above 60s., and at 5s. per quarter duty when it is below that rate.

But it is to the Timber Trade of these colonies that Great Britain should look most particularly for national benefit. The timber trade, in itself, independent of the employment of a very considerable part of the population within the colonies, gives also employment to at least 1400 sail of vessels, navigated by above 20,000 seamen, in its transport! the *whole* value of which is paid to our own countrymen, either for labour in cutting, expense of transport, or duty. The lumberer is the *advanced guard* of all improvement; it is he that first explores, and then invades, the forest; it is through him that the knowledge of the most valuable soils is acquired; from him that the knowledge of navigable rivers and streams is ascertained; and in the following of whom, when at distances from the ports of commerce, new settlements are made, and cultivation commenced. Above all, it is by means of the lumber vessels going out in ballast, that a "cheap bridge" is made for the passage of emigrants. Who, that has any acquaintance with the theory and practice of commercial exchange, will not acknowledge that the abstraction of the value of 1400 cargoes of timber, and all the concomitant expenses of so many vessels, would undoubtedly raise the value of exchange, and thus increase the cost of our manufactures to the colonial consumer, whilst it would to the same amount limit the colonial import thereof.

In the province of Lower Canada, from which only we have official returns, there exist in the

	Saw-mills.	Potash Factories.
District of Montreal	251	462
——— Three Rivers	135	22
——— Quebec	348	5
——— Gaspé, Co. of Bonaventure	3	—
	737	489

It will be seen on reference to the table of exports, there were exported from Quebec in 1831, of deals of 3 inches, 1,646,795; boards and planks, 107,108; and of ashes, 30,153 barrels of pot, and 19,763 barrels of pearl.

It is to be regretted that the limits necessary for this article do not permit the introduction here of other tables, as the lumber trade of New Brunswick would have made a most important addition to the Quebec shipments of lumber. In this province indeed it may be considered the only export in return payment for the manufactures and other articles from Great Britain. At the port of St. John's, 232,515 tons of square timber, besides masts, staves, and lathwood, were shipped in the year 1831.

The deal trade is also extensively carried on in this province, and though forming only a part of the lumber trade, presents the following statistical table:—

Value of Saw-Mills and Mill Property in the Province of New Brunswick.

COUNTIES.	Establishment for sawing Deal.	Estimated value of the Mills, including all improvements, say Privilege, Site, Sluices, Land, Dams, Piers, &c. &c.	Estimated quantity of Lumber sawed at the Mills during the year.	Estimated value of Lumber, when sawed and carried to places of shipment.			Number of Men employed Logging, Sawing, and bringing to places of shipment.
		£.	Feet.	£.	s.	d.	
Saint John County ..	29	31,700	11,305,000	28,262	10	0	320
King's do. ..	30	14,800	3,905,000	9,785	10	0	287
Gloucester do. ..	7	15,500	2,920,000	6,050	0	0	105
Westmorland do. ..	53	18,530	8,805,000	22,012	10	0	324
Kent do. ..	10	6,950	2,650,000	6,575	0	0	84
Northumberland do. ..	15	44,350	15,600,000	39,800	0	0	800
Sunbury do. ..	7	8,500	4,500,000	11,250	0	0	103
Queen's do. ..	6	9,200	6,200,000	15,500	0	0	118
Charlotte do. ..	42	64,500	38,955,000	99,475	0	0	1357
York do. ..	29	18,000	9,000,000	22,500	0	0	300
Grand Total..	228	232,030	103,840,000	261,207	10	0	3798

In addition to this mass of employment, must be added the number of persons engaged at the places of shipment, in lading, trimming, piling, and shipping; the greater part of which duty is performed by *emigrants* on their first arrival, by their earnings, in which the sober and industrious among them are enabled to proceed into the country, and "locate" themselves on land. It has indeed been calculated, that 16,000 persons are employed in the *deal trade alone*, within the province of New Brunswick, independent of the crews of coasting vessels and mechanics.

The number of vessels built in Canada last year is only six, the difficulty of finding profitable employment for them is the cause of so great a falling off. There were built in the last seven years as follows:—

Built in the Province	in 1825	61	Vessels,	22,636	Tons	Register
————————	in 1826	59	....	17,823	..	....
————————	in 1827	35	....	7,540	..	....
————————	in 1828	30	....	7,272	..	....
————————	in 1829	21	....	5,465	..	....
————————	in 1830	11	....	3,059	..	....
————————	in 1831	9	....	3,250	..	....

So that Canada no longer interferes with the ship-building of the United Kingdom, an argument so constantly made use of as accounting for the decrease of ship-building at home.

Ashes, which were formerly the most valuable export from Canada, next to its furs, (now monopolized by the Hudson's Bay Company,) are likely to fall off rapidly; the low rates at which substitutes are brought into the markets by the modern improvements in chemistry, will prevent their manufacture, for the trade will be carried on long, even for many years, after it has ceased to be remunerating; it will at last die.

It will be seen that *Tobacco*, to a small extent, forms a part of the Colonial export. It is grown in the "far west" of the colony, particularly about the head of lake Erie, by FREE *born blacks*, from the United States, who have been driven from the land of their birth by the operation of severe and unchristian-like laws, although the first article in the code of their oppressors is, that "every man is equal." The quality of this article is remarkably good, but the immense distance of inland conveyance prevents it becoming an export article of much extent, even under the existing protection of three-pence per pound. There is no doubt that, a little further extension would greatly increase its export, to the manifest advantage of the colony, and the shipping interest of Great Britain.

It has long been hoped that *Hemp* would have been grown as an article of commerce. Some attempts have been made, and in such cases with success as to the growth, but machinery for its preparation being expensive, has never been erected, and now, by the recent customs' bill, the protection heretofore given, and intended to promote its growth in the Colonies, has for some reason been withdrawn, so that there is now an end to the expectations of supply from thence. The soil of a considerable portion of the already settled parts of both provinces is peculiarly favourable to its production; and had the protection been continued, there is little doubt, from the increase of capital in the province, that it would shortly have been made an article of export, and eventually have made Great Britain independent of Russia for her supply of this necessary material of naval equipment.

For several descriptions of *Seed*, viz. clover, trefoil, carraway, and coriander, many parts of both provinces are from soil and climate particularly suitable; but when an application for a protecting duty for their admittance to the home market was thought of, one of the principal agriculturists of the colony said, "From past and recent experience, I am too wise to alter the cultivation of my land on the faith of a customs' bill."

In fact, it is the uncertainty of the duration of our acts of parliament respecting the colonies, that more and grander results have not been accomplished; the vacillation and changes in regard to that most valuable part of colonial trade, viz. between the colonies themselves, have brought many of the most enterprising colonists to ruin: at one time the preparation of staves, shingles, and provisions; at another time, the breeding of horses, is entered upon with vigour of mind, and extensive outlay of money; and, perhaps, in one short year, the trade for which the articles were intended, is diverted to foreigners, by a customs' bill, an order in council, or an act of parliament.

Coals, though imported to Canada as ballast to a considerable extent, are not noticed in the list; the quantity is about 20,000 tons per annum; they are sold at so low a rate, that an attempt to supply the Canada markets from Nova Scotia has been a failure; Coke from thence is, however, likely ere long to be in demand for manufacturing and steam purposes.

It would extend this article to an inconvenient length, were the various improvements in the internal communications within the provinces, recently executed or contemplated, noticed as they deserve. Improvements by which the falls of the mighty Niagara are overcome, and the vast inland seas of the country brought into connexion, and made subservient to the trade and resources of the mother country;—the Rideau canal alone, with its many stupendous backwaters, forming, from a small stream, lake navigations from ten to twenty miles in length, opening the forest to civilization, and forming a military passage to the upper province, in case of necessity—would require a volume to do it justice. It deserves notice, that the house of assembly of the upper province, duly impressed with the value of such works, has recently passed a vote of £50,000 for the improvement of the navigation of the St. Lawrence, and £25,000 for the completion of the Welland canal; but such improvements are not confined to the Canadas, though only mentioned here. Surely, nothing can be contemplated that may endanger or neutralize the benefits which may fairly be anticipated from such splendid works in their gradual accomplishment.

It will be observed, that the trade of Hudson's Bay, though a part of Canada, has not been noticed in the preceding returns, the knowledge of the transactions of the Company is most scrupulously confined to themselves; but their employment of shipping is about four vessels, together of nearly 2,000 tons, three of which make one voyage to Hudson's Bay direct, and the other round Cape Horn to Columbia, on the north-western coast of America; from the low prices of produce and manufactures, required for their trade with the Indian hunters of their immense territory, their investments cannot be very expensive.

The extent of their import trade may be seen in the following table, from which also some approximation to its value may be made.

Importation of Skins, Furs, &c., by the Hudson's Bay Company.

		1830.	1831.	1832.	Average value.
Beaver Coat	lbs.	1,030	1,018	800	
Parchment	Skins	48,062	87,000	70,100	30s.
Cub	„				
Musquash	„	439,510	728,000	387,000	10d.
Badger	„	618	250	411	—
Bear, black, brown, &c.	„	1,929	3,490	4,158	30s.
Cat	„	25,595	38,200	16,347	4s. 6d.
Fisher	„	1,445	3,400	2,970	10s.
Fox, silver and cross	„	907	4,268		60s.
red	„	2,338		4,494	6s.
white	„	494			
Kit	„	1,302	185	180	
Marten	„	32,818	96,450	37,954	9s.
Mink	„	9,199	22,700	9,990	3s. 6d.
Otter	„	6,397	18,100	13,012	28s.
Raccoon	„	33	177	372	3s. 6d.
Rabbit	„	—	1,330	—	—
Swan	„	5,636	3,559	4,994	—
Wolf	„	2,213	3,140	6,371	3s. 6d.
Wolverin	„	691	1,242	1,472	5s. 6d.
Castorum	lbs.	1,244	3,000	2,707	—
Isinglass	„	540	806	1,371	—
Sea Horse Teeth	„	—	—	45	—
Bed Feathers	„	4,670	16,800	8,174	—
Goose and Swan Quills	M.	304	710	440	—
Oil	Tuns	—	8	3	—
Tallow	Cwt.	—	—	30	—

The total number of skins in the year 1831, being 1,015,509.

Although an average value is here assumed, the same description of skins will vary from 7s. to 40s. each, according to quality and condition.

A matter deeply connected with the value of the North American provinces, and scarcely less so with the security of Great Britain, one which until lately, has almost escaped notice or regard, claims serious consideration.

Nova Scotia, and part of New Brunswick, but especially the former, abounds with minerals, of which *Iron* and *Coal* are the two most valuable, especially when in juxta-position; it is fortunate too, that they are as excellent in quality as abundant in quantity. It is in Nova Scotia that the *General Mining Association* are concentrating their energies. Having, after an outlay of £90,000! abandoned their diamond and gold mines in the "*El Dorado*" of South America: they are now working more certain mines of "*black diamonds*" in its more northern quarter. During the last year about 34,009 chaldrons of coal were sold, for which they are paid 23s. per chaldron, subject to certain discounts, according to the mode of payment, and it is expected that 100,000 chaldrons will be exported to the United States during the ensuing season. Would that the many millions sunk in the loans, wars, and mines of the new states "*called into existence*," by the fancied fiat of a minister, had been led into the less specious but more certain quarters for profit in our own colonies! Although, in the United States, coal exists to an unlimited extent, it is not in its nature qualified for the fuel of steam-engines; with the help of a powerful blast, it makes a hot and lasting fire, but does not generate gas in sufficient quantity or of sufficient strength for that purpose.

The price of native coal, at New York last month, was 9 dollars, or 40s. 6d. per chaldron; there can be little doubt that by the anticipated alteration in the tariffe, an increased impulse will be given to the consumption of our Colonial coal.

There can be little doubt that this trade with the United States will progressively and rapidly increase. One chaldron contains 44 cubic feet, while a cord of wood occupies 128 feet; and when the already scarcity, and the high price of fire wood along the most frequented tracks of the steam-boats in the United States, and the prodigious bulk of "*lumber*" required for a day's consumption in these vessels—is considered—it cannot be wondered at, that coal (good as this is) should quickly push the wood out of use.[*]

Coal has been most aptly called, "the boarded power applicable to almost any purpose which human ingenuity can accomplish," or still more quaintly by a French writer, "cette vive force en lingots;" and the knowledge that Great Britain and France have already commenced building steam vessels of war; and the mere allusion to the probability, as well as possibility, of the power of steam being hereafter brought into active use in maritime warfare, is sufficient to shew the value and the importance of these provinces, and the necessity of retaining them at all hazards.

The *Fisheries* of Newfoundland, though not exhibited in the tables, form a most valuable part of the trade of the British American colonies. The importance of this branch of colonial and national industry has in former times been duly appreciated; but it may be feared, that our late alteration of duties on the wines of *Portugal*, and other more recent occurrences, may have seriously endangered, if not destroyed, the peculiar privileges enjoyed by Great Britain in the markets of that country, where the produce of these fisheries has hitherto been principally consumed, and may at the same time have admitted a dangerous rival. In a future number, I shall be happy to treat this subject more in detail, and with the consideration it deserves.

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[*] One chaldron of coal of 44 cubic feet is equal as fuel to 1¾ cords of Tamarack or Larch Wood of 224 cubic feet!—the consumption of fuel in the John Bull steam-boat on the river St. Lawrence is 1¾ chaldron of coal, or 4 cords of wood of 512 cubic feet, per hour. The distance between Quebec and Montreal being 180 miles, and the average voyage being 19 hours, and consuming 4256 cubic feet of wood in the voyage; this vessel is of 260 horse power, a cord of such wood in weight is about 15 cwt.: about 10,000 cords of wood is taken from Sorel alone, per annum, for the use of steam boats. The John Bull has been known to convey at one trip from Quebec to Montreal 1800 persons, and at another time towing six vessels, amounting to 2600 tons of shipping.

To the credit of the Canadian engineers, and their management of steam-boats, it is deserving of record, that an accident from bursting of boilers (so common and so disastrous in the United States) has never occurred.

The economy of fuel and of water, as well as the perfect security and reduced bulk of Ogle and Summer's boilers, as adapted to their locomotive carriage for common roads, would render the above statement infinitely stronger.

Although this essay appertains to our colonies in North America only; it does not seem out of place to glance at the immense colonial dominions of Great Britain, (dominions whereon the sun never sets!) in each hemisphere, under every climate, enjoying every variety of soil, and capable of producing and interchanging all the necessaries of life, of supplying raw materials for every description of manufacture, and, above all, of *offering the only permanent and increasing markets for those manufactures.* Is it saying too much, that foreign commerce is not *necessary* for her existence, that a system which would protect and encourage the inter-*colonial*, as well as the direct communications of the colonies, might be adopted, which would render her, if required, independent of foreign commerce, except on such terms and conditions as should not operate against the great interests of the empire.

III.—*The* EUPHRATES, *and the* WATER WORKS *of the* PERSIANS, *from the original Notes of Captain F. R. Chesney, of the Royal Engineers.*

It is not our present intention to go into the important question of —which is the easiest and quickest means of effecting a passage to India? Our purpose here is to lay before our readers some account of those methods which the ancient inhabitants of the banks of the Euphrates employed to raise the water of that river, for the purposes of cultivation, or otherwise; and this we will do nearly in Captain Chesney's own words.

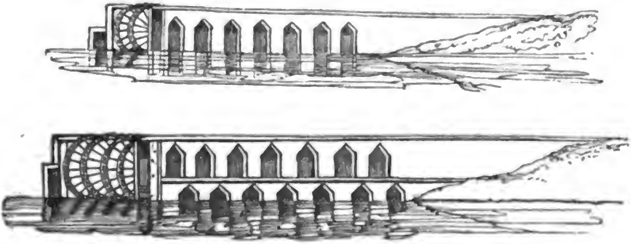
The Euphrates, the "Great River" of Scripture, connected as it is with the history of the earliest times, and the greatest events in the annals of the world, is, by no means, likely to disappoint any moderate expectations which may have been formed of its importance and utility, whenever it shall become as well known and as much used by the moderns, as it once was by the ancients, during ages that it was the channel of extensive commercial intercourse.

The general description of the Euphrates for some distance below the town of Bir, is that of a river of the first order, struggling through high hills, or rather low mountains, making an exceedingly tortuous course, as it endeavours to force its way over a pebbly or rocky bed, from one natural barrier to another. The velocity of its current varies from rather more than two miles to four and a half per hour, according to the season of the year, and the nature of its bed, as it winds round the numerous barriers which obstruct its course. Although the stream in many parts is entirely uninterrupted by cataracts, it is frequently obstructed above the town of Anna, and a little below that place, by a rocky bottom—and is shallow enough in some places for camels to pass in the autumn without burdens; the water rising to their bellies, or about four feet deep.

The upper portion of the river recalls to the mind of a traveller the scenery of that part of the Rhine below Schauff-hausen. The Euphrates here is enclosed between two parallel ranges of hills, its banks being, for the most part, thickly covered with high brushwood, and timber of moderate size. A succession of long, narrow islands, either wooded or cultivated, is found in many parts, and on some of these are moderate-sized towers; the borders of this ancient stream being still well inhabited, not only by Bedouin Arabs, with their tents, but by permanent residents. The scenery above the town of Hit, in itself very picturesque, is rendered still more so to the traveller, as he passes down the current, from the frequent recurrence, at very short intervals, of ancient aqueducts, which are employed to irrigate the interior with the water of the river. In consequence of the circuitous course of the river, they appear in every variety of position, from the fore-ground of the picture, to the distant part of the landscape. These beautiful specimens of art and durability are attributed by the Arabs to the times of the "Ignorant!" meaning, it is presumed, the Persian fire-worshippers. They literally cover both banks, and prove that the borders of the Euphrates were once thickly inhabited by a people, far advanced *indeed* in the application of hydraulics to domestic purposes of the first and greatest utility! These monuments of other times, as may be supposed, have suffered in various degrees during the lapse of ages; and the greater portion of them is now, more or less, in ruins. Some, however, have been kept in repair, and are used either to grind corn, or for the purposes of irrigation. They have a modern wheel attached on the ancient, simple, and most efficient model; the whole being sufficiently well preserved to shew clearly the original plan.

The aqueducts are formed of stones firmly cemented together, narrowing to about two feet, or twenty inches, at the top. They are built at right angles to the bank of the river, and extend from 200 to 1200 yards from it; their height being regulated by the level of the spot to be irrigated. The shorter distances have one row of arches, and the longer ones *two*, one above the other, and both extremely pointed; in fact, almost forming a triangle.

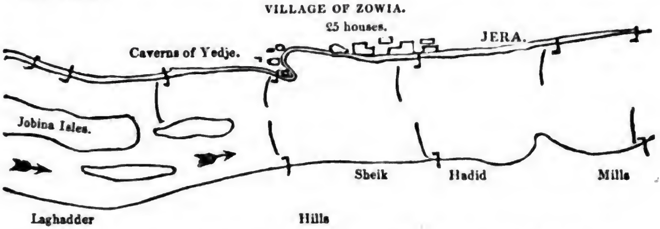
AQUEDUCTS WITH DOUBLE AND SINGLE ARCHES.



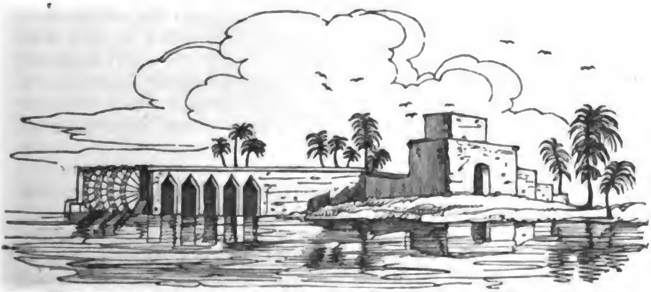
At the one extremity of the structure which extends a little distance into the river, the building takes a turn parallel to the stream, and widens sufficiently to contain one, two, or three and, occasionally, four wheels, parallel to each other, of about thirty-three feet diameter each. Earthen vessels, of three or four inches diameter, and twenty inches long, are fixed at about eighteen inches apart from each other around the exterior rim of the wheel, which is formed of light small scantling: the greatest width of it being that of the diameter of the vessels, or rather less. These vessels, dipping a few inches into the water, become filled, and are forced round by the current in succession. As each vessel in turn becomes uppermost, it discharges its contents into a trough communicating with the conduit of the aqueduct. This conduit is open, and has a slope towards the place to be irrigated. The wheels are likewise moveable; and by elevating the axis by means of stones, or beams of wood, as the water increases, they can work equally well when the water of the river is at any height. The earthen vessels give a sufficient impetus to the wheel, without any other means, excepting, in some few instances, where the current is weak. Here the deficiency is made up by six or eight fans, formed of palm branches, about eighteen inches square, which are added to the sides of the wheels at their circumference; and thus the water has more power to make it revolve. Such additions are, however, very *rare*, and the earthen pots alone are almost always sufficient.

But what most concerns the subject of the river being navigated is, the existence of a parapet wall, or stone rampart, in the stream, just above these aqueducts.

Captain Chesney has examined the bed of the river, and marked the position of the various shoals and islands, as well as of the parapets placed near the mills, and we have taken the following sketch from his large plan of the river, for the purpose of shewing the latter:



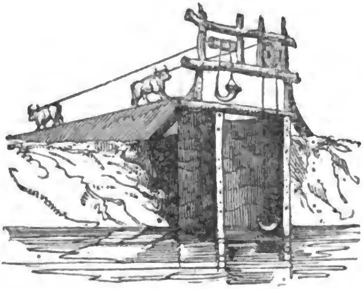
The curved lines projecting into the river, at right angles to the banks, shew the situation of these parapets. In general, a parapet is attached to each of the aqueducts, and almost invariably between two mills on the opposite banks, one of them crosses the stream from side to side, with the exception of a passage left in the centre for boats to pass up and down. The object of these subaqueous walls (mistaken by Alexander the Great for a means of defence against his irresistible legions) would appear to be, exclusively, to raise the water sufficiently at low seasons, to give an impetus, as well as a more abundant supply, to the wheels; and their effect at those times is to create a fall across the river, save the opening left for commerce, through which the water rushes with a moderately irregular surface. These dams were probably from four to eight feet high, *originally*, but they are now frequently a bank of stones, disturbing the evenness of the current, but always affording a sufficient passage for large boats, at *low seasons;* and are not perceptible (except by the broken surface) when the river is swollen.



The annexed is a sketch of the Castle of Jera, on the left bank of the Euphrates, with an irrigating-mill attached to it, immediately below one of these barriers.

Ten miles below the town of Hit, the last of these irrigating mills and artificial barriers is passed; and a few miles lower, the double range of hills is nearly lost. Here the country becomes comparatively flat; the hills less frequent, and some scattered trees, with little brushwood, are found. The river winds less, and, instead of rocks and pebbles, the bed is of sand or mud; the current less rapid, and the water deeper; with an appearance altogether approaching to that of the Danube as it passes from Widden to Silistria, but the banks much more populous and animated. The banks of the Euphrates, in this part, are high, and either perpendicular or in steps; being covered with Arab villages of tents or mats, almost touching each other. Numerous flocks of goats, sheep, and some cattle, are seen feeding near them, with the beautiful mares, so peculiar to the country, clothed and picqueted near the tents of their masters. These, again, are observed, strolling about armed; while the poorer mules and slaves are busily employed with numerous water pulleys, all in operation.

This is another method of raising water, adopted by the Arabs on this part of the Euphrates, by means of horses or bullocks descending an inclined plane, and pulling a rope over a roller in their progress, so as to elevate a large leather vessel, as represented in the sketch.



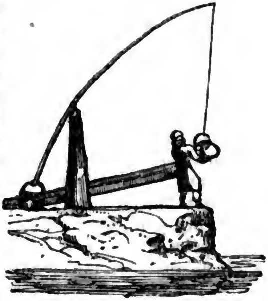
In one corner, at the bottom of this vessel, is attached a long leather spout, which is curved upwards, as the vessel ascends; but being drawn out by the tightening of a cord (which works of itself) as the machine reaches the surface, the contents are discharged into a trough coated with bitumen, and the vessel descends to fill again. This is accomplished by the time the animal has ascended to the top of the inclined plane, and has turned round to descend again. These bullock-rollers have a brick shaft descending to the river, and of sufficient diameter to contain three, and occasionally four vessels, all at work at the same time, with as many animals, and a man to each. They appear to have been known and used in Mesopotamia from the earliest times. The bank of the river is covered with them here; and as they are kept working all day, they produce the fertility of Egypt as far in the country as irrigation is extended, beyond which all is desert.

From the town of Hit to Babylon, the black tent of the Bedouin Arab is seen on the banks of the river, formed of strong cloth made of goat's hair and wool mixed, and supported by four poles. It is always open on one side, that of shade or shelter, and is almost the only kind of habitation met with throughout this distance. The banks of the river are partially cultivated, and the rest consequently desert, with the date-tree shewing in occasional clusters. In descending the river, the irrigating cuts and canals become more frequent towards Babylon, which is encircled by two streams called the Nile; one above, and the other below the principal river; beyond which they *unite*, form a lake, and produce all the abundance derived from the operation of water on a rich soil.

For about thirty miles' descent from Hillah, numerous mud villages, imbedded in date-trees, are seen on both banks. These are succeeded by huts, very neatly formed, of bundles of reeds, about six inches diameter, placed four feet apart. The sides of the building, which rise thus from the ground, at the width of the structure, bending in two curves, meet at the roof; and over this frame-work are placed reed-mats, very neatly made, leaving sometimes the whole of one end open, and at the other merely the space for a low door. The building, though small, has often a division in the middle, and not unfrequently a small room formed in the roof *above* the inner apartments, with its floor also of reeds and matting. Villages of this kind of huts are exceedingly numerous; and, in general, built around a mud fortification, with semicircular towers and battlements, enclosing a sufficient space to secure the grain cultivated by its own villagers from plunder, the express object of other tribes and depredators.

The country being level, and little elevated above the river, irrigation is easily effected. Another simple method is employed in this part of the river, for raising the water for the purpose of irrigation, and consists of a wooden lever several feet long; one end of which projects over the river, with a leather bucket at one extremity; and being balanced at the other, when full, by a basket of earth and stones, very slight manual exertion causes the bucket to ascend, and its contents are emptied with ease and rapidity.

This method is practised in Egypt and Spain, and also in Canada, where it must have been taken by the early French settlers in that country. These water-levers, with small canals running from them, are very numerous along this part of the river, the banks of which, for a long distance into the country, are covered with verdure, and fringed with a double and nearly continuous belt of luxuriant date-trees, as far as the Persian Gulf, and attaining a degree of *perfection* and *productiveness* far beyond that of the Nile.



IV.—*To the Editor of the Nautical Magazine.*

Mr. Editor—Observing that your valuable Magazine is open not only to papers calculated to inform the minds of your readers on important professional points, but also to occasional pieces tending to excite their best feelings, and improve their hearts, I beg to communicate a few lines on a subject which few, I think, can contemplate without interest. *Portsmouth, Feb.* 1, 1833.

FORGET ME NOT, BY A MOTHER.

(*Imitated from the Persian.*)

For Mary's breast spring flowers I sought;
  Herself in life's first tender bloom.
Alas! how little then I thought,
  That death had marked her for the tomb;
That death had poised a cruel dart,
  To strike the swift unsparing blow;
When, with a mother's joy of heart,
  I first the opening primrose saw:
And now—than this still fragrant flower,
  More quickly she has passed away:
No tears, no prayers, no earthly power,
  The uplifted hand of death could stay;
Nor piety, nor spotless youth,
  With every gentle charm and grace;
Nor form more just to nature's truth,
  Than pencil's magic art can trace.
Yes, now am I indeed bereft,
  On earth no hope but soon to die;
The only wish that I have left,
  Is with my child in peace to lie.

But cease my soul! His will be done,
  Whose mercy in chastising reigns:
Unto that mercy she is gone,
  And glory for affliction gains.
"Though dead, she lives," and lives in bliss;
  He speaks who cannot err nor lie,
The Saviour came on earth for this—
  For this "He was content to die."
With him she dwells, and round his seat,
  The white-robed virgin choirs among,
Is heard that voice most soft and sweet—
  Is heard my Mary's pious song.
Or thence uplift on angel-wings,
  With swifter course than purest light,
On earth she gracious message brings,
  To cheer this gloomy vale of night.
E'en now, methinks around my bed
  Her spirit fondly hovers near:
Behold, she sooths my throbbing head,
  And wipes away the swelling tear.
Behold, with smiling joy she seems
  To catch the ever-ready kiss—
Oh, surely these no mocking dreams,
  But foretaste sent of perfect bliss!
And now, methinks with her I stray
  Once more along the village green;
With her in sportive contest play,
  The lightly-bounding ball between:
And now, as rosy morn and eve
  Aloft their splendid banners raise,
We kneel in prayer, then say "believe,"
  And sing our great Redeemer's praise.

Oh, nightly thus, my child descend,
  With comfort to thy once dear home,
From Him, our high and mighty friend,
  A messenger of gladness come;
Bend o'er thy mother's wasted form,
  The heavenly tidings to disclose,
In words that hush the wakeful storm,
  And peace inspire, and soft repose:
My soul unfettered then, and free,
  And airy as the swift-winged dove,
Shall fly to many a scene with thee,
  Of past delight and tender love.

Nor thus alone, in night's dark hour—
More welcome then than brightest day—
Sent from above with balmy power,
Around my heart shall visions play:
In thoughts of waking fancy too,
I'll clasp my fondling to my breast;
In colours paint her bright and true,
Where'er I go, where'er I rest.—
Oft as the little garden's pride,
Or bower I trim—her infant choice—
I'll bring her bounding to my side,
And listen to her well-known voice:
Oft, as retired in forest glade,
Mary, thy much-loved flowers I see;
And weeping seek the thicket's shade,
To mourn in solitude for thee:
Then shall thy gentle spirit near,
With flowing hair and beaming eye,
Point—smiling point—to happier sphere
Beyond the firmament on high;
That promised land, where we shall meet,
And fearless live of human woes,
In meadows gay, 'midst flowers more sweet,
And lovelier than the blushing rose.—
Yes, there with fadeless flowers divine,
Which innocence like thine shall wear,
I'll deck—once more the joy be mine—
Thy forehead clear, and golden hair.
Again triumphal hymns we'll sing,
Again in concert press the key,
And bless and magnify the King,
Who giveth us the victory.

Cease then—Oh cease—this wild alarm,
These doubts unjust, and groundless fears;
He who alone can death disarm,
And wipe away a mother's tears,
Will hasten to complete the doom
Pronounced on man's last enemy,
To break the barrier of the tomb,
And set its fettered captives free.
Oh! comfort to my troubled heart,
And peace, which nought on earth can give!
Nought save this certain hope impart,
That still my child with me shall live!
In faith I see the approaching day—
In faith I hear the swift command—
The heavens and earth have passed away:
The word of God doth surely stand!

[The above lines were written, we believe, on the death, in April, 1829, of Mary Inman, the young but highly accomplished daughter of a talented and respected friend of ours, well known to Nautical men. We readily give them a place, and we think our readers (at least those who are parents) will not find much fault with us for so doing.—EDITOR.]

V.—*On the Defects in the present Form of the* REPORT ON SHIPS' SAILING QUALITIES. *By* HENRY CHATFIELD, *of the Royal Dockyard, Devonport, and Member of the School of Naval Architecture.*

ALTHOUGH it is freely admitted among scientific and practical men, that no great advancement can ever be expected in naval architecture without *experience*, it is nevertheless a remarkable fact, that we have yet to commence some efficient system of acquiring experimental knowledge, in a form which may be made available in the science of naval construction. Bold as this assertion may appear, there will be no difficulty in substantiating it, without going very far into the subject.

It is presumed that most persons who take any interest in nautical matters, are aware that it is usual to furnish our men-of-war with a skeleton form of report, for the purpose of obtaining what is considered to be a true account of their sailing qualities; and it appears to be generally supposed that every species of information, which the naval architect can require, may be met with in that report. If this were the case, the following remarks would be unnecessary: but a candid examination of the *Questions* and *Answers* which the common form of report contains, must soon convince every unprejudiced mind, that, as it now stands, it is exceedingly crude, and quite inapplicable to scientific purposes. In other words, that it is deficient in the characteristics of experimental philosophy, inasmuch as it wants the *legitimate terms*, and *numerical accuracy*, which are essential to science.

It is at all times desirable, especially when brevity should be consulted, to be as perspicuous as possible in explaining the application of any general observations which bear upon scientific pursuits; we will, therefore, proceed at once to the subject of this paper, by endeavouring to point out the inefficiency of the present form of report on ships' sailing qualities; from which premises, the necessity of improving it will be made evident.

Let us commence by observing what may be assumed almost as an axiom; namely, that there is no property of a ship which demands more serious attention than her STABILITY; for, her rate of sailing, the easiness of her evolutions, and even her safety, depend on judiciously proportioning the quantity of sail according to a vessel's stability. Now the practical method of forming an opinion at sea, on a vessel's capability of carrying sail, is by observing whether she heels *much* or *little*, when acted upon by external forces, such as the force of the wind, or the shock of a wave; and if several ships be in company, the only way of judging of their relative stabilities is, to compare their respective angles of deflection from the upright position. If ships were correctly masted, which simply means in a *given* proportion to their stabilities, they would, under similar conditions of weather, exhibit the same results; that is, if each were furnished with a pendulum affixed to a graduated arc, the whole of them would denote one common angle of heeling, by simultaneous observation. This is a principle at which we here want to arrive.

Every one connected with the naval profession, and very many who are wholly independent of it, well know that English ships of war are frequently undergoing material alterations in what is denominated the "establishment" of masts and yards—which term, by the bye, seems to be rather ill chosen, when we consider the variableness of the *establishment*, as it is called, and how that establishment has been settled. For instance, alterations are usually proposed, or determined on, upon one of the two following grounds: either, first, upon the mere impressions of naval officers, who, by casting their eye over the ship they are about to command, form an opinion, solely from her general appearance, of what sail she ought to bear; and upon that opinion suggest deviations from the regular establishment; or, secondly, upon the authority of the official reports we are about to notice, they being the only records of experiments to which the naval architectural department has hitherto been able to refer, for the purpose of inquiring into the necessity of altering the establishment.

The very circumstance of practical men attempting to judge of the supposed capabilities of a ship by the "eye," is an admission that *a knowledge of what other ships have done assists inquiry*, and that the habit of instituting comparisons between the forms and peculiarities of bodies which are acted upon by the laws of nature, is a correct mode of proceeding. This method of investigation suggests itself to every thinking mind, though untutored in the principles of natural science. But the question is, To what extent should a comparison of ships' properties be carried? The philosopher would say, that whatever has been reduced to mathematical rule, should be treated with mathematical accuracy: that lines, surfaces, and solids, the nature and effects of which admit of calculation, should be expressed in terms of quantity; and that the only way of making any satisfactory progress in naval science, is to reduce every thing, as far as is practicable, to numerical precision, and then to analyse and compare the elements of all ships. While, on the other hand, the purely practical man, unconscious of the advantages of analytical investigation, passes by first principles, with their chain of consequences; and fancies that the language of natural science cannot be conveyed in too general terms. This seems to be the error into which English ship-builders have fallen; the consequence of which is, that though we are apt to pride ourselves upon our experience, the recorded facts which shew what experience has done for the theory of construction, make but a sorry exhibition of our progress in those principles of naval architecture which are dependent on experiment.

To those who never had the curiosity, perhaps not the opportunity, to consult our official reports on ships' qualifications, the following exemplification of the manner in which they have hitherto been made out, will shew that science has never been fairly assisted by registered facts. This will be seen by the annexed Queries and Answers on those most important features in naval architecture, *stability*, and a ship's capability of firing her *lee* guns.

The question which relates to stability is this:—

Query. "How does she stand under her sail?"

In reply to this query, we find the following answers, taken promiscuously from documents belonging to different ships.

Answers. "Tolerably well."—"Pretty well."—"Very well."—"Rather inclined to be crank."—"Stiff with lower sail, crank with lofty," &c. &c.

Then comes the statement which refers to the manner in which ships carry their lee ports.

Query. "How does she carry her lee ports?"

Answers. (From different ships.) "High."—"Low."—"Rather low."—"Very low."—"Bold."—"As well as others."—"One foot above water," &c.

The only attempt at numerical precision in either of the answers, is that which states that one vessel carried her lee ports twelve inches above water.* But what are we to gather from this? We do not hear any thing about the quantity of sail set, the ship's inclination, or the state of the weather at the time; nor can we form an idea whether the ship was circumstanced as she would have been if going to engage an enemy to leeward. If the ship's inclination had been stated in *degrees*, we might have told the height of the ports above water, more accurately with the assistance of the draught, than by any mode of measurement, in feet and inches, at sea; but as the answer now stands, a naval constructor may as well be without it. And all the answers which relate to stability, are equally vague.

When a naval constructor, who forms his designs by calculation, peruses questions and undefined answers like the above, he immediately discovers that recorded facts, which might have been made extremely useful for his purposes, are very destitute of explicit information. He knows that if several ships be in company, and the inclination of any one of them, accurately measured, were determined on as a criterion for the rest, it would not be difficult to calculate the *quantity of sail* which each of the others ought to have had, to have caused them all to heel to exactly the same angle as the most approved ship: or, which is a similar thing, that it would not be difficult to calculate what *stabilities* the several ships ought to have possessed, to have enabled them to carry their given proportions of masts and yards, and yet incline to that angle only beyond which they ought not to have heeled. To bring this principle into operation is, as was before observed, a great desideratum; but if the application of mathematics to naval architecture be neglected, in spite of humiliating facts which have so often been forced upon our notice, we have no right to complain, if we afterwards find that a wasteful expense, in alterations and professional disappointment, are consequent upon an unscientific mode of construction.

We know that inefficiency is not economy; let us hope then that the time has arrived when the reasonable expectations of those who aim at a perfect development of inductive truths for scientific purposes, though attended at first with a little trouble and some trifling expense, may meet with a fostering protection at the hands of men qualified, by high intellectual attainments, to direct the progress of "*knowledge reduced to a system*," in the naval institutions of this country. Individuals now in power have no old prejudices to overcome—no usages to set aside which it could be painful to abandon, upon the sure principle of disliking innovation. We have much to accomplish even in the mode of *masting ships*, as will appear by the following fact, of which the Lords Commissioners of the Admiralty were themselves eye-witnesses.

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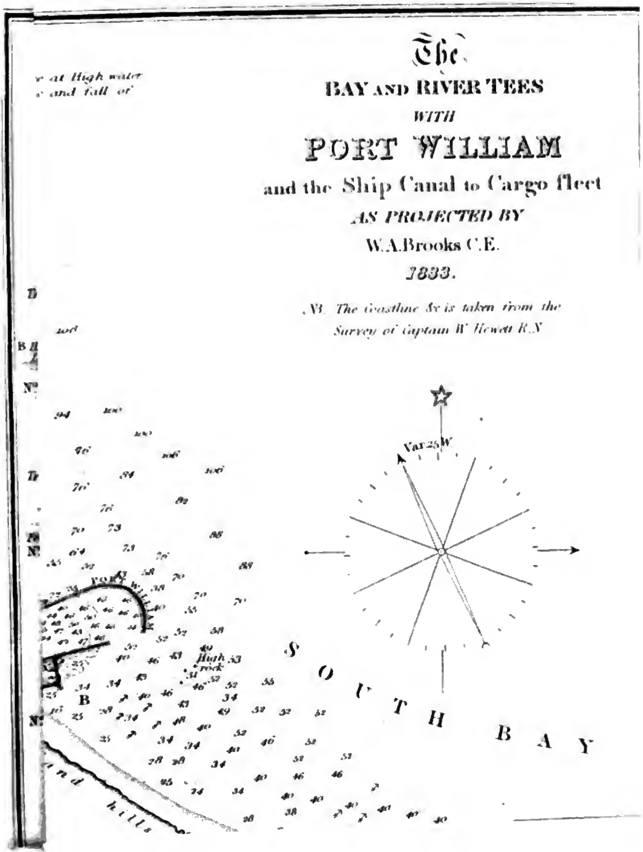
* Charybdis, 18-gun brig. Report of sailing qualities. 1812.



The

BAY AND RIVER TEES

WITH

PORT WILLIAM

and the Ship Canal to Cargo fleet

AS PROJECTED BY

W.A.Brooks C.E.

1833.

N.B. The Coastline &c is taken from the Survey of Captain W. Hewett R.N.

In August last, H. M. Ships, *Vernon*, *Castor*, *Dryad*, and others, tried their relative sailing qualities; when, in order to judge of their comparative stabilities, under similar conditions of wind and weather, the *angles* to which the ships severally inclined were particularly noticed, and the following were the results:—

Vernon inclined 4°—Castor, 10°—Dryad, 25°.

The Vernon and Castor may be supposed to have been similarly stored and provisioned; but as the Dryad had just returned from a foreign station, we may assume her to have lost part of her stability, owing to the consumption of water and provisions; but after making every reasonable allowance, the discrepancy is still too great not to be received, in conjunction with the relative inclinations of the other two ships, as a proof that we either follow no system, or a very imperfect one, in masting vessels of war.

It has already been remarked, that a ship's rate of sailing, the easiness of her evolutions, and her safety, depend on the quantity of sail being judiciously proportioned to the stability; and yet, important as this is, it is obvious from the foregoing fact, that it still remains for us to combine theory with observation and experiment, in order to form a system of naval construction which can be depended on.

Doubtless, a ship may have too much stability as well as too little: but it would be presumption on the part of the writer to particularize either of the above-named ships as having been deficient in, or as possessing an excess of, stability. The celebrated Chapman says, that in a double-reef'd topsail breeze, when the absolute strength of the wind is *two pounds* upon the square foot, a line-of-battle ship possesses sufficient stability, if she incline *seven degrees*, under double-reefed topsails, top-gallant sails, jib, fore-topmast staysail, and driver; the courses being hauled up, and the same arrangements taking place on board, as if an enemy were to be engaged to leeward. But some people run away with the idea that a ship cannot be too *stiff*, forgetting that a gust of wind, or the shock of a wave, is diminished in its effect upon the masts and hull by a *well-balanced* floating body, in the same manner that the momentum of a cricket-ball, on being caught, is less sensibly felt by bringing into operation the elasticity of the hand and arm; or upon the same principle that the jolting of a land-carriage is rendered harmless by the yielding of the springs. The reed may recover itself unhurt from the tempest which would tear the oak from its root.

Nautical experiments have hitherto received too litttle attention. They might be conducted with minute accuracy, and with incalculable advantage to the service, if properly taken in hand;

but it would be useless to attempt it, unless the practical seaman and the naval architect bring themselves into intimate relation with each other, and mutually interest themselves in the great object of improving English ship-building on correct principles. DUHAMEL makes a very excellent observation on this point, in an article on stowage: he says, "a ship badly constructed, whose faults are to be corrected by stowage, will sail badly; and that which is well constructed, if badly stowed, will do no better: the stowage, therefore, is an essential, difficult, and delicate part of a ship's economy; to perfect which, officers do very properly to act *in concert* with each other."

The author of these remarks ventured to question the utility of the present form of report on ships' sailing qualities in a pamphlet, about a year and half ago, while the late surveyor of the navy, Sir Robert Seppings, was in office; and has since had the honour to suggest to the Rt. Hon. Lords Commissioners of the Admiralty, a new form of report, in which it was proposed to note the *heel* of a ship, the quantity of *sail* set, the state of the *weather*, the *rate* of sailing, the *angle* to which the yards are braced, and such other particulars as must tend to give a fair character of every ship in all points of importance. Should that recommendation be deemed worthy of attention, he confidently anticipates much practical good to result from it, seeing how satisfactorily and easily naval men are impressed with the necessity of devoting their best attention to subjects of this nature, when brought before them in the shape of familiar discussion.

VI.—THE RIVER AMAZON, AND ITS BRAZILIAN TRIBUTARIES.

Considered with a view to their Navigation by Steam.

(Continued from page 80.)

WE have already described the course of the Madeira, from its confluence with the Guapore, till it finally disembogues itself into the mighty Amazon. The Guapore takes its rise nearly 100 miles to the north-east of Villa Bella, which is in lat. 15° 5′. S. After a winding course of about 630 miles, during which it receives eight large rivers, it forms a junction with the Madeira, as before-mentioned. On this river there are five falls. In the year 1742, Manoel de Lima, with five Indians, three mulattoes, and a negro, descended in a canoe by the Guapore and the Amazon; and in 1746, Captain Joaõ de Souza descended the Tapajoz and the Amazon to Para, and returned the following year by the Madeira, with European merchandise. After his arrival, other dealers departed by the same route, which is frequented to this day, in spite of the great difficulties to which this prolonged voyage has hitherto been subject. It requires from ten to twelve months for a loaded canoe to ascend from Para, by the Amazon, Madeira, and Guapore. Formerly, the communication between the capital and these distant provinces was carried on through St. Paulo, but since the opening of the roads through Goyaz to Bahia, and the new navigation to Para and Rio de Janeiro, the dealers of Cuiba have abandoned the former line of route. But their trade might be carried on much more advantageously, were the navigation of the large rivers opened, that discharge themselves into the Amazon, viz.—the Xingu, Tapajoz, and Madeira. Various ways, in fact, remain to be opened for the transit of the rich productions of these provinces. Two to Gram Para, by the Xingu; and the other by the Mortes, Araguaya, and Tocantins. The same number to Rio de Janeiro and St. Paulo; the latter by the Rio San Laurenço, Pigury, Ticte, and Sucururu,—the former always by land, traversing the districts of Boromania and Cayaponia, crossing the Paranna between the confluence of the Paranhiba and the ford of Urucapunga—a shorter one, by 300 miles, than that at present frequented through Villa Boa. But of all, by far the most eligible is that afforded by nature through the rivers Mortes, Araguaya, and Tocantins. The former of these streams has its numerous heads to the south of the Cuiba road. It runs to the north-east and discharges itself, with considerable volume, into the western arm of the Araguaya, where it forms the island of St. Anna.

The Tocantins.—The principal head of this mighty river is the Uruhu, which takes its rise on the southern borders of the Sierra Dourada, a short distance to the southward of the capital, and, after seventy miles of course towards the north-east, loses the name, confounding itself with the Almas. Again, after ninety miles' course to the north-east it also loses that name, uniting itself, first, with the Maranham, a considerable river. Below the confluence of these two rivers, there is a fall that impedes the progress of canoes in either direction. At 140 miles from the point it receives the Parannatinga and the Palmas: at the confluence of the former, which is in lat. 12° 20′ S. the Maranham takes the name of Tocantins, which it preserves until it discharges itself into the ocean below the capital of Para. At seventy miles beyond the last confluence, it receives the large river Canna-brava on the left, and a little below, on the right, the Manoel Alvez; a little farther to the north the river Tabocas discharges itself on the left; and, after a farther interval of 140 miles, it receives the Somno, and a short distance beyond the second Manoel Alvez, a much more considerable river than the first of that name. A few miles below the point of junction of the last, the Tocantins describes a considerable winding course towards the east, again approximating very near to the place where it had originally changed its direction, and immediately forming another contrary winding to the west, forms two peninsulas. About 100 miles further, in lat. 5° S., the Araguaya incorporates itself with it, rendering its volume immense, and it still continues to increase in width as it flows northwards, till it passes the Villa Cameta, in lat. 3°, where its breadth exceeds 100 miles. The tide flows up this river 200 miles to Itaboca, where the river is precipitated in a short space over three falls, which obliges the canoe men to unload their canoes.

The importance of these three rivers, in developing the industry and civilization of the provinces of Matto Grosso and Goyaz, will be seen, on a single glance at the map. Not only a direct water communication between Villa Bella and Gram Para would be opened, but also one between the two extensive provinces of Matto Grasso and Goyaz, highly beneficial to both. But although the manifold advantages that would accrue to these provinces from such a navigation are evident, it is no less apparent that both the population and civilization of these regions must make gigantic progress, ere the moral and physical obstacles that at present oppose them, can be overcome.

South America is the country of romance; the gilded halo that encircles the early history of her discovery, has in every age, since that event, dazzled the imagination, and encouraged a wild spirit of adventure. Not only speculative, but even practical statesmen have been infected with the mania. And thus the sagacious mind of the great Pombal, struck with the magnificence of the physical geography of the northern part of Brazil, had actually conceived the project of transporting the seat of the Portuguese empire to the banks of the Amazon.

Among the many wild schemes concocted in this country, of which South America has been the theatre, it is surprising that the steam-navigation of the Amazon has not been sooner brought forward, especially when the magnificent results which this mighty element has produced in the western states of North America, are considered. But nothing, in fact, has contributed so much to keep alive the general delusion with regard to this portion of America, than the habit of reasoning from the example of the United States:—day and night are not more opposite in their natures, than the moral and political conditions of the European descendants in these two continents. The progress of population in the former went on gradually increasing, from east to west, or from the Atlantic states to the interior: but the case was far different in Brazil; it was not the pressure of a full population that, in the latter country, drove the inhabitants of the maritime provinces into the interior; it was the spirit of mining adventure that even at one time partially annihilated agriculture, and threatened the depopulation of the maritime provinces, and which actually led, on the part of the government, to the enactment of certain laws, prohibiting the transportation of slaves into the mining districts. The provinces of Matto Grosso and Goyaz, and the interior of Piauhi, were therefore first peopled by the Paulistas, as is evidenced in them all by the existence of the manners and customs peculiar to that southern province. The effect of this on these fine provinces has been most baneful. Not only has agriculture been neglected, upon a soil that would almost spontaneously produce the fruits of every clime, but the wretched inhabitants dream away their existence in the pursuit of the rich mines which, according to the golden traditions of the country, were once discovered, but of which all traces have been lost. The moral and social condition of their scattered population is therefore wretched in the extreme. In addition to these causes, we may add the physical ones, of, 1st, The excessive droughts which in these interior regions occur so frequently, and are so fatal to vegetable and animal existence; 2dly, The insalubrity of the banks of these great rivers, upon which there constantly rages a remittent fever of a most malignant character; and, 3dly, The existence of the falls, which must be either turned or removed, in order effectually to open the navigation—causes which, in the present state of the civilization and population of Brazil, renders the bare idea of steam-navigation on these rivers an absolute chimera—it is in the distance of the future that these mighty streams are destined to do for Brazil what the Mississippi has done for the United States. When the population is greater, when agriculture flourishes, and the virgin soil* of these fine provinces yields its fruits to the hand of industry, then the importance of these outlets will be felt, and then only will the obstacles that at present impede their navigation be removed. An attempt, therefore, prematurely to develop the resources of this part of the South American continent, would, like most other chimerical projects, of which it has been the theatre, prove a splendid failure.

It is true, that some recent travellers take a different view of the subject; but the opinions of men who merely pass through a country, must be received with a cautious deference. In Brazil, a mere knowledge of the country language, if unaccompanied by an accurate estimate of the national character, will, rather than otherwise, mislead the traveller; for in that country, by a very different standard, is the Brazilian's ideas of things measured, in comparison with our own. Lieut. Maw, whose journal we have read with interest, says, "that the effects of a steam communication between the Rio Negro and Gram Para, would be magical." A little further he adds, "and an attempt should also be made to introduce it coastways." This traveller must have treated a subject so important very lightly, or he would have discovered that the latter project was tried in the year 1825, and failed. The

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* So thin is the population of Goyaz, that even the mines are not worked, for want of hands.

Brazilian government purchased two of the largest steam-boats in England, and they made one or two trips between Rio Janeiro and Para; but the boats were unable to stow away sufficient fuel to navigate them from port to port. And, again, on their arrival at these ports, such was the supineness of the authorities, that they were sometimes detained two or three weeks ere a sufficient quantity of fuel was collected to enable them to pursue their voyage. With this fact before us, and that knowledge of Brazil which a long residence there affords, we are decidedly of opinion, that the returns of even the partial steam-navigation of the Amazon would not recompense the projectors.

There is, however, one part of the Brazilian empire, that opens a splendid field for the introduction of this powerful agent. This is the Rio Doce, which rises in the Serra de Mantiquerra in Minas Geraes, and falls into the sea about 350 miles to the northward of Cape Frio. It has only four falls, situated near its source, and which might be removed at a trifling expense. It flows through the most populous and fertile districts of the empire; and, were the navigation opened, the most splendid results would be obtained. The productions of Minas Geraes would then be transported by water to the capital; and even those of the more distant provinces of Goyaz and Matto Grosso would, on arriving in Minas Geraes, be transported by the same channel. In the present state of Brazil, this is almost the only river on which the introduction of steam-navigation affords the slightest prospect of remunerating the labour and expense of such an enterprise. And even here we will not attempt to conceal the fact, that, from the jealousy of the natives, and the character of the government, the difficulties to be overcome, in the first instance, would be immense.

There is also another consideration that should powerfully operate in deterring English speculators from making Brazil the theatre of their operations. We allude to the present political condition of that vast empire:—tranquil to the eye of a superficial observer, she is in fact a slumbering volcano; the seeds of the most frightful anarchy are sown in every one of her provinces; and she is on the eve of that terrible ordeal, that has so long, and still continues to devastate the ci-devant Spanish colonies. The project of establishing a local legislature in each province, a project that has already passed the senate, will prove the last blow to the ephemeral monarchy that exists, and lead to a state of things that we fear will out-Herod even the bloody catastrophe of St. Domingo.

VII.—A SAILOR'S ADVICE TO HIS SON,* ON ENTERING THE ROYAL NAVY.

(Continued from page 95.)

LETTER VI.—*Seamanship—Navigation—Astronomy—Fortification—Gunnery—Geography—History—Mathematics—Ethics—Mechanics—Naval Architecture—Languages—Commerce—Political and Martial Genius.*

IT will be your duty to derive as much information in the above-mentioned subjects as your health and opportunities may permit. Your future distinction may perhaps solely depend on your superior attainments in the various branches of knowledge connected with your profession. And although interest, or fortuitous success, may contribute to your early promotion, it will be highly commendable in you to strengthen, to enlarge, and to embellish your mind with those endowments which constitute the scientific officer in public, and the accomplished gentleman in private life.

When prospects of laudable ambition are no longer open to you—should your career be retarded by sickness, accident, disappointment, or neglect, you will find such acquirements a never-failing source of consolation; and, should it be your fate to terminate your days in undistinguished retirement, (whether your past meritorious exertions may have been appreciated or not,) your proficiency in knowledge will bring you the agreeable and satisfactory resources of present occupation and unassuming self-respect.

Seamanship, simply considered, is much undervalued by young officers, but it is the foundation of a comprehensive intelligence, uniting all the valuable materials which constitute a good officer. Until you know every minute and complicated part of the machine which you navigate; until you are thoroughly acquainted with the principles of working a ship, and the practical phrases made use of for that purpose, in your own and in foreign languages, especially in French; until you possess a knowledge of the vast science of astronomy, as far as is necessary to navigation; until you are well informed in geography, the theory of the tides, the use of the globes, fortification, and the use of artillery; until you are conversant with the history of the celebrated seamen of former times, particularly those of your own country, such as Blake, Cook, Nelson, and others, with moral and social institutions, as they relate to personal and civil rights, as well as to public systems of political and military jurisprudence; and, until you fully understand that code of discipline, by which your professional views and conduct must be entirely regulated, you cannot be considered a thorough seaman. This is seamanship, in its most comprehensive signification. The first rudiments of it you will acquire by your own observation, and by questioning the old seamen whenever any evolution is performed, such as heaving up the anchor, making and shortening sail, tacking, wearing, lying to, mooring and unmooring, &c.—all of which include practical seamanship. Theory must be acquired by study and application under the schoolmaster; and if the boatswain, gunner, and carpenter are respectable men, and you behave to them with civility, they will each readily instruct you in their several duties of rigging, gunnery, and ship-building. A thorough knowledge of navigation will enable you to conduct a ship to any part of the globe with the assistance of astronomy. Geography will shew you beforehand the place you are going to visit. History will inform you of such transactions as have previously happened there; and the knowledge of languages will enable you to converse with the natives, and particularly to ascertain whether that which you have read in their history be true.

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* At the age of thirteen.

In the remote regions to which you may sail you will see fortifications, artillery, vessels, &c. variously constructed, and adapted to peculiar properties of local situation, climate, or otherwise. In the respect of the latter, you will find that the Norwegian launches from behind his rocks, and braves a stormy sea, in a little yawl fastened together with wooden pegs—the islander of the Pacific guides the incredible velocity of his cane-built proa, half immersed in water; and the Coromandel pilot is perpetually overwhelmed in his flexible masula boat, ere he can pass the furious breakers which incessantly dash themselves on his coast. From a knowledge of the construction and properties of your own vessel, you will be enabled to form an opinion of the inferior or superior qualities of the respective deviations you may meet with. For instance, the Dutch (once the second, and vigorously disputing to be the first maritime power in Europe) have made the slowest advances in the modern improvement of naval architecture. Why is this? you will ask. The answer is, Because they are under local disadvantages, and their commerce and naval celebrity have been on the decline for more than a century. Their harbours are shallow and of intricate navigation, consequently their vessels, both of war and trade, are flat, short, and bulky; easily worked, but void of velocity in progressive sailing. They owe their decline to the nautical enterprise and commanding resources of Great Britain. Russia and America present a different picture. They are states advancing in naval strength. Why? Because they are empires advancing in knowledge, courting every improvement, and possessing resources in embryo of which other nations are devoid. It would lead me into too long a discussion, to elucidate this last assertion; we will therefore reserve it for a future correspondence. I merely glanced at these two instances, in order to lay before you a mode of exercising your mind, by applying to its spontaneous suggestions the terms *why* and *wherefore*.

Geometry and trigonometry will enable you, with practical precision, to ascertain the elevation of distant or contiguous objects; the width of channels; the demarcation of fortified places; the most secure method of approaching, attacking, carrying, or retiring from hostile batteries; and to penetrate with an accurate perception into a variety of physical operations peculiar to the element on which you are about to proceed, of which many around you will be entirely ignorant, and little disposed to be otherwise. A general insight to moral and political institutions, especially those of your own country, will induce you to examine the fabrics of foreign jurisdiction. An acquaintance with the admirable and liberal constitution under which it is your good fortune to have been born, will enlarge your discrimination of this subject, and enable you to form perspicuous comparisons with others; to ascertain whether their inhabitants are more happy and free than your own countrymen; whether their government is better consolidated, and its vast and complicated machinery better conducted, than at home; whether the mass of the people are more ingenuous, honest, discreet, moral, or benevolent; or whether, on the contrary, they are more proud, profligate, disorderly, or voluptuous—more reserved and sincere in their manners and address, or more insinuating and agreeable. On a slight, superficial survey of national characteristics, you will suppose the Frenchman to be frivolous, loquacious, and insincere; the Spaniard, haughty and vindictive; the German, wrapt in silent phlegmatic sensibility; the Portuguese, hardy and active; the Dutchman, boorish and avaricious, yet hospitable; the Swede, open, honest, and simple; the Dane, steady and temperate; the Pole, active, ferocious, and high-minded; the Russian, sturdy, and ignorant; the Italian, subtle and sanguinary; the Turk, courageous, sedate, and sensual; the Orientalist, superstitious and simple; the Irishman, gay, volatile, and gallant; the Scotchman, cautious and faithful; the Englishman reserved, enterprising, and sincere. Such general classification can by no means include any whole population; it may indicate the prevalent feature; but you will find that birth, education, and circumstances produce among the same people gradations of character as infinitely various even as their stature and physiognomy.

It is essentially necessary that you should understand the principles of naval architecture, not only for the purpose of fixing in your memory a nomenclature of the various parts in the construction of a ship, but also that you may know their utility and application. This important science has as yet been but very imperfectly investigated in the English language, and the best works on it have been written in French. When you are on shore on leave, instead of filling up your time by lounging about among the idle or dissipated groups of your companions, visit the dock-yards and arsenals, to which your uniform will always obtain you admission. Besides the advantage of information that you will gain there, it will be a far more amusing spectacle to witness the busy scene of docking, repairing, and undocking of ships, than the listless monotony of a crowd, whose chief ambition is to display the fashion of their uniform. Nothing can be more gratifying to an intelligent boy than the arrangement and despatch of the multifarious branches of mechanism forwarded in our great seaports. He may there inspect the manufacture of every article belonging to his ship—ropes, sails, anchors, cables, blocks, masts, yards, rudders, oars, boats, &c. He may there see vessels of every dimension, from a lighter to a first-rate ship, in various stages of forwardness. The first elongation of the keel; the gradual elevation of the timbers; and the final process of planking, decking, painting, and launching—vast supplies of timber, storehouses filled with cordage, and all the apparatus of a ship's furniture constantly being consumed; shot, cannon, powder magazines; the various offices for conducting the detail of business, its method and celerity; with a variety of other objects,—these will give him a comprehensive idea of the magnitude of naval affairs—of their importance to his country, and of the enormous expense attending its marine establishment. An acquaintance with these subjects will give him a great superiority over those gentlemen whose chief delight is in parading and showing off their persons in the streets.

To exhibit to you here a demonstration of the pressure of the succumbent fluid upon the surfaces of immersed bodies; of the different modifications of that pressure in acceleration or resistance; of its relation to the diversification of the curved or rectilinear forms, would be premature, and above your present comprehension. Such abstract investigations must be reserved for your maturer intellect, as well as the whole combined operation of the atmospheric and floating pressure on the hull, masts, yards, and sails of a ship in every situation of evolution, progressive sailing or unmanageable recumbency, when rudder, sails, or skill are of no avail; but an acquaintance with this branch of nautical science will explain to you many daily hidden phenomena, entirely hidden from the mere practical seaman; and will enable you to act on many emergencies, for which he would be utterly incapable to provide any remedy. Yet, as the most efficient mode of acquiring and retaining knowledge depends upon initiating yourself into the elementary principles, the study of mechanics (which you will see daily illustrated in the tackle, quoin, handspike, winch, capstan, &c.) should precede that of naval architecture.

The knowledge of the French language is so universal, that it is considered discreditable to a gentleman not to understand it, if he cannot speak it fluently.

It is besides very useful in the navy; and Spanish and Italian may be considered next to it. As I before observed, the best treatises in marine science are written in the former language—as Bouguer, du Hamel, Lalande, &c. What you already know of Latin will be a great auxiliary to you in acquiring them, which, if you are so disposed, you will have many opportunities of doing. A good grammar and vocabulary of each will be sufficient to ground you distinctly in their rudiments; and you must take advantage of every opportunity, while it is yet in your power, to improve that foundation, by requesting foreigners to practise and correct you in their idiom and pronunciation. Spanish is by far the most difficult and concrete of the three.

An acquaintance with those branches of human industry which constitute the riches of a state, is frequently undervalued by those whose pursuits are chiefly of a military nature. But as matter of information, a knowledge of the relative situation of arts, manufactures, and commerce, in various quarters of the globe, will add an important and useful stock of intelligence to the officer's mind. Avoiding speculative opinions as to the past, or ultimate influence of a vast and increasing commerce on the manners, morals, or real happiness of mankind, and the solid permanent power of a nation, it is sufficient for my purpose to observe to you, that an insight to its present operation on the prosperity of rival countries is requisite and desirable.

I do not mean that your mind should take a commercial bent—far from it. Poring over £. s. d. calculations, for the sake of pecuniary accumulation, is as unsuitable to an officer as the neglect of them would be reprehensible in the counting-house clerk: but as you will be engaged in a profession established to protect and to promote every interest of your country, and especially its trade, it is in an enlarged signification that I wish you to know something of the nature of the great principles of commerce. The various foreign vessels which you may visit will elucidate your reading on the subject. Anchorage in foreign ports will accurately and extensively increase your information, for it embraces innumerable considerations. Port duties and rights, interior and exterior customs, excise, charter-registry, and rights of vessels—natural productions—export and import articles of a country, ingenuity of its artisans, mode, price, quantity, and quality of its manufactures—rates of exchange, general character of its mercantile population, method of transacting business, and many more which I shall not here enumerate.

In the ancient histories which you will read, especially of Greece, Rome, and Carthage, where striking examples of individual and general heroism are more frequently portrayed than in the annals of remoter times, you will learn the power of that weapon, the sword, which you are destined to wield: you will learn the origin, nature, and necessary authority of laws, and the mighty capacity of the human mind to overcome vast difficulties by political sagacity alone. Philip of Macedon, his son Alexander the Great, and Julius Cæsar, afford, in my opinion, the three greatest instances of the combination of the former with the latter in one person, which the records of history afford. In what is denominated modern history, you will read of a display of the same ambitious passion for dominion and conquest, as if no system of pure, self-denying religion had in the interval been revealed to mankind; and though the refinement of our immediate period has mitigated the sanguinary attributes of war, it has hitherto done little to remove the causes which provoke to inveterate hostility. It will therefore be your duty at all opportunities personally to inform yourself of the political and military strength of the countries which you visit, of the nature of their governments, and peculiar character of their legislature, diplomacy, and resources of the discipline and tactics of their fleets and armies, the pilotage and extent of their harbours and coasts, the position and assailable points of their fortified places, the warlike genius, capacity, and physical character of their officers, troops, and seamen, and of their modes of manœuvre by land and sea. To collect into one form your intelligence upon these points—never enter too minutely into the detail of trifling matters—keep a journal, and insert all your observations in laconic and explicit terms. Exercise your memory frequently upon it; for however you may be taught to deprecate war as an evil, it is often an unavoidable one, in which your duty will engage you, and where all the information you can gain will better qualify you to act with distinction to yourself and benefit to your country, whose sword and bulwark is her navy.

(To be continued.)

WORKS OF NAUTICAL AND GEOGRAPHICAL SCIENCE AND ART.

BOOKS, INVENTIONS, ETC.

Mechanical Improvements connected with the Royal Navy, &c. &c., with descriptive drawings. Third Edition. By Joseph Bothway, Royal Navy. London. Staunton. 1833.

This is one of those little productions of an ingenious mind, that ought to be in the possession of every naval officer. The work contains a statement of the numerous inventions of Mr. Bothway in a ship's equipments, illustrated with drawings, and is enriched with testimonials in their favour by many experienced naval officers. Some have been established, and some are yet undergoing the test of experience. We are not without our doubts that the corroding effects of the salt-water will not operate against the metal which Mr. Bothway uses, particularly in the cat-block. This, however, does not operate against his principle, and there are yet many things to which Mr. Bothway's ingenuity may be directed with as much success as he has hitherto enjoyed.

Rowland's Double Sextant.—In some former numbers of our work we have alluded to this valuable instrument, and having ourselves observed the improvement applied to the quadrant, we spoke confidently of its success with regard to the sextant. Since then, Mr. Rowland's invention having been approved of by scientific officers of the navy, he was granted a sum of money by the Lords Commissioners of the Admiralty to complete his new instrument. This is nearly done, and we have had an opportunity of confirming our high opinion of it. We anticipate its becoming a favourite instrument with the scientific naval officer, and the surveyor, who will, no doubt, appreciate its advantages. In a future number we shall describe those advantages which it possesses over the ordinary sextant; and in the mean time we hope the inventor will reap that benefit to which his ingenuity in having extended the power of the sextant so justly entitles him.

Magnetic Influence on Chronometers.—In our last number we alluded to various experiments going forward at the Royal Observatory with some chronometers belonging to Messrs. Arnold and Dent, for the purpose of ascertaining to what extent magnetism affects the rates of these machines. The results of the experiments, so far as they have gone, prove most satisfactory, and afford some novel and interesting particulars respecting the deranging effects produced by the near proximity of a magnet. In a chronometer with the balance on the old principle, the rate has been altered as much as half an hour per day, varying in amount according to the relative positions of the chronometer and the magnet, while the effect on another with the new balance, for which Messrs. Arnold and Dent have taken out a patent, has been little or nothing. We shall take an opportunity in an early number of laying the particulars of these experiments before our readers; but enough has been already ascertained to substantiate the observation which we made in treating on this subject, that it is to the composition of the balance, and the balance-spring, that we must look for the improvement of the chronometer.

While on the subject of the chronometer, we believe that we are only paying a just tribute to departed worth by inserting the following inscription, copied from a stone in Hampstead churchyard:

"In memory of Mr. John Harrison, late of Red Lion Square, London, inventor of the timekeeper for ascertaining the longitude at sea. He was born at Fonlby in the county of York, and was the son of a builder at that place, who apprenticed him to the same profession. Before he attained the age of twenty-one, he, without any instruction, employed himself in cleaning and repairing clocks and watches, and made a few of the former entirely of wood. At the age of twenty-one he employed his whole time in chronometrical improvements. He was the inventor of the grid-iron pendulum, and of the method of preventing the effect of heat and cold upon timekeepers, by two bars of different metals fixed together. He introduced the secondary spring, to keep them going while winding up, and was the inventor of (most or all) the improvements in clocks and watches during his time. In the year 1735 the first timekeeper was sent to Lisbon; and in 1764 his then much-improved south timekeeper having been sent to Barbadoes, the Commissioners of Longitude certified that it had determined the longitude within one-third of half a degree of a great circle, having erred not more than 40 seconds in time. After nearly sixty years' close application to the above pursuits, he departed this life on the 24th day of March, 1766, aged 83."

PORT WILLIAM: THE PROPOSED HARBOUR AT REDCAR.—It gives us much satisfaction to find that opinions are so general in favour of this projected harbour, which was noticed in our last number. So much is it approved of, that we anticipate the formation of a company very speedily to carry it into execution. It should have been stated in our last, that the calculations of Mr. Brooks in obtaining his estimate were formed on the supposition that the stone may be procured at the rate of 2s. 6d. per ton, an expense we believe beyond what it really will be. We have been among the earliest advocates of this splendid harbour, and seeing, as we do, the important advantages which it promises to the country more fully every day, and considering it worthy of commemorating the reign of our most gracious sovereign, the most appropriate name, in our opinion, that it could receive, is that of PORT WILLIAM.

NAVAL TACTICS.—To our Nautical readers who interest themselves in this subject, we recommend the perusal of that useful and valuable work entitled "Naval Evolutions," lately published by Sir Howard Douglas, Bart. On the subject of the controversy which called forth this work, we have already subscribed our opinion, and we have since learned that some principal points urged by the advocates of Mr. Clerk are *utterly groundless*. It is with increased satisfaction therefore that we repeat it as our firm belief, that, although contrary to the opinion of his Admiral, but acting under a firm conviction that he was doing his duty, it was the Flag-Captain, Sir Charles Hamilton, who broke the enemy's line in the Formidable on the 12th of April, 1782. Our narrow limits preclude our going into the subject of naval evolutions; but we strongly recommend the work to those who follow this important study.

TIDES.—A self-registering tide-guage is about to be erected at Plymouth Dock-yard, on the principle of that at Sheerness, described in our eighth number. A barometer and thermometer are to be attached to it.

THE GOTA CANAL.—This extensive work is at length accomplished, and the Cattegat and Baltic are now connected by an interior navigation through Sweden, by which the circuitous route through the Sound and Belts is avoided. It commences at Goteburg (or Gottenburgh) and traverses the districts of Elsbourg, Skarabourg, and Linkœping. It consists of several distinct canals, the first of which, on the west, follows the entire course of the river Gota into lake Wener; the next commences at the east shore of that lake, to the north-east of Mariestad, and follows a S. S. E. course to lake Wiken near Tatorp. At the lock of Hairstorp, on the last canal, the highest water commences, of the great canal of Gota. Further, on this division is formed by lake Wiken, by a small canal which joins the lake to Billstrommen by this river itself, and by a canal which joins the Billstrommen to lake Botten. Five canals have become necessary on the slope of the Baltic. The four first connect the lakes Botten, Wetter, Boren, Boxen, and Asplangen; and the fifth establishes the communication betwen this last lake and the Baltic, which it joins at a league and a quarter below Soderkoping. The distance from the eastern shore of lake Wener to the Baltic, is about 120 English miles, of which more than sixty miles is occupied by lakes. The number of sluices is fifty-six. The depth of the canal is 9·7 feet, and the breadth at the bottom 41·6 feet. On the western shore of lake Wetter, a fortress was commenced in 1820, which would enable the government to stop the communication between the eastern and western parts of the canal, if necessary.

VOYAGE ROUND THE WORLD.—NAVAL SURVEYS.—The voyage of *La Favorite* round the world, under the command of M. Laplace, *Capitaine de fregate*, in the years 1830-31-32, has just been published, we believe, in Paris. It consists of two large octavo volumes, ornamented with vignettes, accompanied by an atlas containing twelve charts and plans of places visited by the Favorite. These are Isle Bourbon, Seychelles, Pondicherry, Masulipatam, Malacca, Singapore, Manilla, Macao, Van Diemen's Land, Port Jackson, New Zealand, Valparaiso, and Rio Janeiro. In crossing the gulf of Tonquin, M. Laplace has discovered an unknown reef, which he has named after his ship the Favorite. The charts are by M. Paris, lieutenant de vaisseau.

H.M. Schooner, Jackdaw, was commissioned on the 20th of February, at Chatham, by Lieut. E. Barnett, to continue the survey of various parts in the West Indies, under the directions of Commander Richard Owen, who will shortly commission H.M.S. Thunder, at Chatham, for that purpose. The recent surveys of Commander Owen in that part of the world, during the seasons of 1831 and 1832, have been mostly on the coasts of Yucatan, Honduras, and the Mosquito coast. These extensive and dangerous coasts, on a reference to the Admiralty chart of the West Indies, begin to wear the appearance of correctness; and, in respect to the latter the navigator, will have ample warning of the uncertain position of its dangers by the old coast-line being left on the chart, some 30 miles to the westward of the new one, thus rendering them peculiarly conspicuous. These coasts include a space of more than 900 miles, and, with other important places in the West Indies, have been examined by Commander Owen.

NEW SOUTHERN CONTINENT.—Captain John Biscoe, commanding the brig Tula, has just returned to England, after having made some important discoveries of land in a high southern latitude. The Tula was despatched by the Messrs. Enderby, on a sealing voyage towards the south, in 1830; and, after experiencing great severity of weather, and encountering much ice, discovered land in about 67° S., and longitude 50° E. The extent of coast seen was about 300 miles. We understand that Captain Biscoe is preparing an account of his voyage, which, from the discovery he has made, and the dangerous situations in which he found his vessel at various periods, will no doubt be highly interesting.

ARCTIC LAND EXPEDITION.—Our distinguished countryman, Captain George Back, left Liverpool on the 17th February, in the Hibernia, New York and Liverpool Packet, for New York. From thence he will proceed to Montreal on his way to the far distant land, where his search for Captain Ross is to commence. In an early number we will present our readers with a map, shewing his intended track.

MALABAR'S TOPMASTS.—In our last number we quoted a paragraph from the Hampshire Telegraph which stated that "the topmasts of the Malabar, fitted on Captain Morgan's principle, answer every expectation." Having read Mr. Pearce's letter to the editor of the Portsmouth Herald, we hope that he will take some means of rendering *his invention*, illustrated with diagrams, more generally known. We shall be happy to afford him the opportunity of doing it in our own pages, if he should have not already adopted another channel.

WATER-BAROMETER.—In allusion to the water-barometer at Somerset-House mentioned in our last number, we are informed by a correspondent that there is another at Edinburgh, which was fixed in the class-room for natural philosophy at the university in that place about ten years ago. This was constructed under the direction of the late Professor Sir John Leslie. We believe these to be the only two instruments of the kind in this country, and perhaps in the world.

THE NEW NAUTICAL ALMANAC.

To the Editor of the Nautical Magazine.

MR. EDITOR—Observing that you admit freely into your valuable Magazine articles likely to prove interesting and useful to seamen, in a professional point of view, I am induced to believe that the following brief notices of the principal alterations in the rules of Nautical Astronomy, (rendered necessary by the new arrangements to be commenced in the Nautical Almanac for 1834, and to be continued in the future volumes of that work,) may not be unacceptable from your obedient servant, C. N. R.

1. The Nautical Almanac has hitherto been arranged for Greenwich *apparent time*, by which is meant time as shewn at Greenwich by the true sun, or by a sun-dial. According to this kind of time it is *noon* when the true sun is

on the meridian, that is, when its meridian altitude is taken. At this instant a pocket watch has been supposed to be set to 12^h or 0^h, and has been thus made to shew *apparent time* nearly for the succeeding twenty-four hours. The time being noted from a watch so set, when any Astronomical Observation may have been taken, and the longitude in time added or subtracted according as W. or E.; Greenwich date has been got in *apparent time*, for which date any element that may have been wanted in the course of the calculation, has been taken from the Nautical Almanac.

2. After the commencement of 1834, the Nautical Almanac will be arranged for Greenwich *mean time;* by which is to be understood time as shewn by a clock or watch set to 12^h 0^h, when an imaginary sun called the *mean sun* is on the meridian. The true sun makes successive revolutions from meridian to meridian again, in intervals that are unequal; so that no clock or watch can be adjusted to go exactly with it: the *mean sun* is supposed to make all its revolutions from meridian to meridian again in the same interval precisely; which is in fact the *average* duration of an *apparent* day.

3. *Mean time* is commonly used on shore, and all clocks and watches properly regulated are there set to it. It differs from *apparent time*, or time shewn by a sun-dial, by what is called the *equation of time*, amounting at most to about a quarter of an hour. Sometimes mean time is before apparent time by this equation, and sometimes behind it; the exact value of such equation, and whether it is to be added to or subtracted from apparent time, in order to get mean time, being specified in the Nautical Almanac.

4. Hence at sea to set a pocket-watch to *mean time;* when the true sun is on the meridian, put it past, 12^h or 0^h by the equation of time, when that equation is marked *add* in the Nautical Almanac, and put it *before* 12^h or 0^h by the equation, when marked *subtract*. A watch so set may be supposed to shew *mean time* at the ship for the following day; if the watch shew any hour A. M., 12 hours must be added, and the nautical or civil day put one back; if the watch shew P. M., it is not necessary to make any alteration. So that the time being noted by the watch when any observation is made, and expressed astronomically; and then the longitude in time being added or subtracted according as W. or E., a Greenwich date in *mean time* will result; for which the requisite elements in the Nautical Almanac may be found.

In doing this, 24^h must be rejected from the result, if greater than 24^h, and the day put one forward. If the E. longitude in time be too great to be subtracted, 24^h must be added to ship time, and the day put one back.

5. It may be here, however, recommended to the seaman, wherever it shall be practicable, always to note the time shewn by a *chronometer*, when an astronomical observation is made. By correcting this time for the error of his chronometer, he will be able at once to express the Greenwich date in mean time more correctly and easily than by the other method; taking care to add 12^h when necessary, (which will be known from the longitude by account,) in order to get the proper Greenwich astronomical day.

6. A pocket-watch may also be set to ship mean time at the rising or setting of the sun, when the lower edge appears to be above the horizon by the sun's semidiameter. At that instant apparent time may be taken from an amplitude table, and consequently mean time got by allowing for the *equation of time*.

CHANGES IN RULES OF NAUTICAL ASTRONOMY.

The principal changes to be attended to by the seaman in the rules for computation will be specified under the head of each case.

Bright Stars passing the Meridian.

7. In Examples of this kind, the Right Ascension of the meridian (R. A. mer.) is required, which may be found most easily thus:

Get a Greenwich date in mean time, (see 5, 6,) to which take from the Nautical Almanac for the Greenwich date *sidereal time for mean noon*, to which add *Ship mean time*.—The sum (rejecting, if necessary, 24 hours) will be the R. A. of mer. required.

The remainder of the operation of finding what bright stars will pass the meridian the first after a given mean time, will be the same as heretofore.

8. When the instant in mean time is required of a given star's transit over the meridian, it will be necessary to find the *sidereal time at mean noon* for the Greenwich date, and then to subtract the R. A. of the given star, having previously added 24^h if required.

Latitude by Sun's Meridian Altitude.

9. Page 1 of each month being arranged in the new Nautical Almanac for *apparent time*, the seaman may proceed as heretofore in working the meridian altitude of the sun, if he please. But perhaps he will find it more advantageous upon the whole, to make the computation according to *mean time*, since the observation of the sun's meridian altitude occurring so frequently at sea, he will thus be less likely to err in other examples in the course of Nautical Astronomy, in which a Greenwich date in mean time will be found indispensable.

10. To get a Greenwich date in mean time for the meridian observation of the sun, assume ship *mean time* after 0^h by the equation of time, when it is additive; and before 0^h, that is before 24^h, by the equation of time, when it is subtractive. In the former case the day of the month will be the common one used in the log-book; in the latter case the day of the month must be put one back. The longitude in time must then be added if W. and subtracted if E.; 24^h being added in the operation, if necessary, and the day put one back; or 24^h rejected in the result and the day put one forward.

11. But the necessary Greenwich date in mean time may be got at the instant of this, as well as any other nautical observation, from a chronometer as explained in Art. 6.

Ex. 1—Jan. 16, sun's meridian altitude observed in longitude 80° 15′ W. a chronometer, $2^m\ 10^s$ *fast* on Greenwich mean time, shewed $5^h\ 33^m$. Equation of time 10^m to be added to apparent time.

Sh.	Jan. 16	0^h	10^m	or thus	Chr.	5^h	33^m
	Long.	5	21 W.		Fast		2
Gr.	Jan. 16	5	31	Gr.	Jan. 16.	5	31

Ex. 2—Jan. 16, sun's meridian altitude observed in longitude 80° 15′ E.; a chronometer, *slow* on Greenwich mean time $5^m\ 40^s$, shewed $6^h\ 43^m$. Equation of time 10^m additive.

Sh.	Jan. 16,	0^h	10^m		Chr.	6^h	43^m
On	Jan. 15,	24	10		Slow		6
	Long.	5	21 E.				
						6	49
Gr.	Jan. 15,	18	49	(i. e.) Gr.	Jan. 15,	18	49

Ex. 3—Sept. 30, sun's mer. altitude observed in longitude 80° 15′ W.: a chronometer, *fast* on Gr. mean time 3^m 15^s, shewed 5^h 24^m. Equation of time 10^m to be subtracted from apparent time.

Sh. Sept. 29,	23^h	50^m	Chr.	5^h	24^m
Long.	5	31 W.	Fast		3
Gr. Sept. 29,	29	21	Gr. Sept. 30,	5	21
On Sept. 30,	5	21			

Ex. 4—Sept. 30, sun's mer. altitude observed in longitude 80° 15′ E. chronometer *slow* on Greenwich mean time 20^m 45^s, shewed 5^h 58^m. Equation of time 10^m subtractive.

Sh. Sept. 29,	23^h	50^m	Chr.	5^h	58^m
Long.	5	31 E.	Slow		21
Gr. Sept. 29,	18	19		6	19
			(i.e.) Gr. Sept. 29,	18	19

The remaining steps in working the sun's meridian altitude will be the same as heretofore; it being recollected, that if the Greenwich date be got as in the above examples, *(in mean time,)* the sun's declination must be taken from page II. of each month, and *not* from page I.

(To be continued.)

NAUTICAL MISCELLANY.

NAVAL INTELLIGENCE.

The Royal Navy in Commission.

⁂ S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

Actæon, 26—Hon. F. W. Grey, 2d Jan. at Malta from Tripoli.

Ætna, S. V. 6—Com. E. Belcher, at Oporto.

Alban, St. V.—Lieut. A. Kennedy, 15th Jan. left Falmouth for Mediterranean.

Alfred, 50—Capt. R. Maunsell, Malta.

Algerine, 10—Com. Hon. J. F. F. De Roos, 8th Dec. at Bahia.

Alligator, 28—Capt. G. R. Lambert, Malacca.

Arachne, 18—Com. W. G. Agar, 13th Dec. Sailed for La Guayra. 1st Jan. at Demerara.

African, St. V. — Lieutenant J. Harvey, Milford.

Ariadne, 28—Capt. C. Phillips, 10th Jan. at Port Royal, Jamaica.

Asia, 84—Capt. P. Richards. Flag Ship, (*i*) Tagus, 1

Astrea, 8—Capt. W. King, Falmouth.

Athol, *Troop Ship*—Mr. A. Karley, 4th Dec. sailed for Dublin.

Badger, 10—Com. G. F. Stowe, Simon's Bay.

Barham, 50—Capt. H. Pigot 5th Oct. at Malta. Flag Ship (*c*).

Beacon, (late Meteor,)—Com. R. Copeland, Archipelago.

Beagle, 10—Com. R. Fitz-Roy, 2d Nov. at B. Ayres. 24th Nov. at Monte Video.

Belvidera, 42—Capt. Hon. R. S. Dundas, 1st Jan. at Tripoli.

Blanche, 46—Capt. A. Farquhar, K. H. C. B. 13th Dec. sailed. 10th Jan. at Jam.

Brisk, 3—Lieut. J. Thompson, Gold coast.

Britannia, 120—Capt. P. Rainier, Tagus.

Buffalo *Store Ship*, Mr. F. W. R. Sadler, *Master*, Chatham.

Caledonia, 120 — Captain J. Hillyar, Tagus.

Carron, St. V.—Lieut. Com. J. Duffill.

Castor, 36—Capt. Rt. Hon. Lord John Hay, North Sea.

Ceylon. 2.—Lieut. H. Schomberg, Malta.

Challenger, 28—Capt. C. H. Freemantle, 1st Aug. sailed for Swan R.

Champion, 18—Com. Hon. A. Duncombe, 18th Nov. arrived at Malta.

Charybdis, 8 — Lieut. Com. R. B. Crawford, Gambia.

Clio, 18—Com. J. J. Onslow, 17th Nov. arr. at Rio from Pacific. 5th Dec. sailed for Falkland Islands.

Cockatrice, 6—Lieut. Com. W. L. Rees, Rio.

Cockburn, 1—Lt. Com. C. Holbrook, Kingston, Lake Ontario.

Columbia, St. V. 2—Lt. Com. R. Ede, Woolwich.

Columbine, 18—Com. O. Love, 18th Dec. arr. at Barbadoes.

Comet, St. V.—Woolwich.

Comus, 18— (late Comet) Com. W. Hamilton, 2d Feb. arr. at Plymouth. Into dock, 9th Feb. 19th went out.

Confiance, St. V. 2—Lieut. Com. H. F. Belson, 17th Feb. Downs.

Conway, 28—Capt. Eden, 30th Jan. left Plymouth for Westward.

Cordelia, 10—Com. C. Hotham, 10th Jan. at Malta.

Curaçoa, 26—Capt. D. Dunn, 1st Aug. at Madras. 14th Aug. arrived at Singapore. 25th Aug. sailed for Manilla. Expected at Bombay in December.

Curlew, 10—Com. H. D. Trotter, 3d Nov. arr. at Mauritius from Ceylon.

Dee, St. V. 4—Com. R. Oliver, 30th Jan. arr. at Woolwich.

Dispatch, 18—Com. G. Daniell, 25th Nov. arr. at Jamaica. 30th Dec. sailed for Havana.

Donegal, 74 — Capt. J. Dick. Flag Ship. (*d*) North Sea.

Dromedary—R. Skinner, Bermuda.

Druid, 46—Capt. S. Roberts, C.B. Lisbon.

Dublin, 50—Capt. Rt. Hon. Lord J. Townsend, 25th Dec. at Valparaiso.

Echo, St.V. 2—Lieut. Com. Otway, Oporto.

Excellent, 58 — Capt. T. Hasting, Portsmouth.

Fairy, S.V. 10—Com. W. Hewett, Sheerness.

Favorite, 18—Gold coast.

Firebrand—Lieut. W. G. Buchanan, Falmouth.

Firefly, 2—Lieut. J. M'Donnel, Bahamas.

Firefly, St. V.—Lieut. T. Baldock, 9th Feb. sailed for Mediterranean.

Flamer St. V 6—Lieut. R. Bastard, Woolwich, 2d Feb.

Fly, 10 — Com. P. M'Quhae, 30th Dec. sailed for La Guayra.

Gannet, 18—Com. M. H. Sweney, 3d Nov. at Port au Prince. 10th Jan. at Jamaica.

Griffon, 3—Lt. J. Parlby, 9th Feb. left Falmouth for Africa.

Harrier, 18—Com. H. L. S. Vassal, 25th Sept. left Ceylon for Bengal.

Hermes, St. V.—Lieut. J. Wright, 24th Dec. Malta.

Hornet, 6—Lieut. F. R. Coghlan. 20th Oct. sailed for South America.

Hyacinth, 18—Com. F. P. Blackwood, Portsmouth.

Imogene, 28—Capt. P. Blackwood, August, Malacca.

Investigator, 16—Mr. G. Thomas, Sheerness.

Isis, 50—Capt. J. Polkinghorne, Flag Ship (*k*) 4th Nov. sailed for Mauritius.

Jackdaw, S. V.—Lt. E. Barnett, Chatham.

Jupiter, *Troop Ship*—Mr. R. Easto, 7th Jan. sailed for Mauritius.

Kangaroo, 3—Lieut. T. Hickey, Bahamas. 8th Dec. at Havana.

Larne, 18, (*late Lightning*,)—Com. W. S. Smith, North Sea.

Leveret, 10—Lieut. W. F. Lapidge, 18th Jan. arr. at Lisbon from Falmouth.

Lightning, St. V.—J. Allen, Portsmouth, 13th Feb.

Madagascar, 46—Capt. E. Lyons, 12th Jan. Napoli di Romania.

Magicienne, 24—Capt. J. H. Plumridge, 7th Sept. arr. at Batavia from Singapore.

Magnificent, 4 — Lieut. J. Paget, Port Royal.

Magpie, *Cutter*—Lieut. J. Moffat, Sheerness.

Malabar, 74—Capt. Hon. J. Percy, North Sea.

Mastiff, 6, S. V.—Lieut. J. Graves, Archipelago.

Melville, 74—Capt. H. Hart, Sept. at Madras. Flag-ship. (*h*)

Messenger, St. Transp.—Woolwich.

Meteor, St. Ve.—Lieut. Symons, Malta.

Minx, 3—Lt. J. Russell, 10th Jan. at Jam.

Nautilus, 10—Com. Rt. Hon. Lord G. Paulett, Oporto.

Nimble, 5—Lieut. J. M. Potbury, Bermuda.

Nimrod, 20—Com. Lord E. Russell, Oporto.

North Star, 28—Capt. Lord W. Paget, 1st Jan. at Barbadoes.

Ocean, 80—Capt. S. Chambers. Flag-ship, (*a*) Sheerness.

Onyx, 10—Lieut. A. B. Howe, Plymouth.

Orestes, 18—Com. W. N. Glascock, Oporto.

Pallas, 42—Capt. W. Walpole, 30th Dec. at Barbadoes.

Pearl, 20—Com. R. Gordon, Jamaica.

Pelican, 18—Com. J. Gape, Corfu.

Pelorus, 18—Com. R. Meredith, 13th Oct. Simon's Bay.

Philomel, 10—Com. W. Smith, 25th Nov. Gibraltar.

Pickle, 5—Lieut. C. Bagot, Bahamas.

Pike, 12—Lt. A. Brooking, 4th Feb. sailed for Lisbon.

Pincher, 5—Lt. J. Hookey, Bahamas.

Pluto, St. V.—Lieut. G. Buchanan, Bight of Benin.

Pylades, 18—Com. E. Blankley, Rio Janeiro.

Racehorse, 18—Com. F. V. Cotton, 2d Oct. sailed for Jamaica.

Rainbow, 28—Capt. Sir J. Franklin, Knt. 9th Dec. Patras.

Raleigh, 18—Com. A. M. Hawkins, 11th Oct. arr. Nauplia.

Rapid, 10—Com. C. H. Swinburne, Malta.

Rattlesnake, 28—Capt. C. Graham, 23d Dec. sailed for Lima.

Raven, S. V. 4—Lieut. W. Arlett, Oporto.

Revenge, 78—Capt. D. H. Mackay, 30th Jan. sailed for Gibraltar.

Rhadamanthus, St. V.—Com. G. Evans, 19th Feb. sailed for Scilly to assist the Forester.

Romney, *Troop Ship*—Mr. R. Brown, Cork.

Rover, 18 — Com. Sir G. Young, Bart., 9th Feb. sailed from Plymouth for Mediterranean.

Royalist, 10 — Lieut. R. N. Williams, 7th Feb. arrived at Falmouth from Oporto.

St. Vincent, 120—Capt. H. F. Senhouse.

Salamander, St. V.—Com. W. F. Austin, Woolwich.

Samarang 28—Capt. C. H. Paget, 10th Oct. M. Video.

San Josef, 110—Capt. R. Curry, Plymouth, Flag-ship. (c)

Sapphire, 28—Capt. Hon. W. Trefusis, 14th Nov. Bay of Fundy.

Satellite, 18—Com. R. Smart, North Sea.

Savage, 10—Lieut. R. Loney, 27th Jan. sailed for Oporto.

Scout, 18—Com. W. Hargood, Chatham.

Scylla, 18—Com. Hon. G. Grey, 5th Oct. at Napoli.

Seaflower, 4—Lieut., J. Morgan. 14th Jan. arrived at Falmouth.

Serpent, 16—Com. Symonds, Portsmouth Station, cruizing.

Skipjack, 5—Lieut. W. Shortland, Bahamas.

Snake, 16—Com. W. Roberison, North Sea.

Sparrow, *Cutter*—Lieut. C. W. Riley, Portsmouth Station, cruizing.

Sparrowhawk, 18—Com. Currie, at Jamaica, 10th January.

Spartiate, 74—Capt. R. Tait, 16th Feb. put into Plymouth, on way to South America.

Speedwell, 5—Lieut. Crooke, 4th Nov. at Barbadoes.

Speedy, *Cutter*—Lieut. J. P. Roepel, Plymouth, cruizer.

Stag, 46—Captain N. Lockyer, North Sea.

Swan, 10—Lieut. J. E. Lane, North Sea.

Sylvia, 1—Lieut. T. Spark, Portsmouth Station cruizer.

Talavera, 74—Capt. T. Brown, North Sea.

Talbot, 28—Capt. R. Dickinson, C. B. 29th Oct. Mauritius.

Trinculo, 18—Com. R. Booth, 18th Dec. arrived at Bahia.

Tweed, 20—Com. A. Bertram, 1st Dec. arrived at Jamaica from Bermuda.

Tyne, 28—Capt. C. Hope, 28th Nov. arrived at Rio. 9th Dec. at Rio.

Undaunted, 46—Capt. E. Harvey, 29th Oct. Mauritius.

Vernon, 50—Capt. Sir G. A. Westphal, Knt. 18th Feb. sailed for Halifax.

Victor, 18—Com. R. Russell, 12th Dec. at Havana.

Victory, 104—Capt. C. R. Williams, Flag-ship (o) Portsmouth.

Viper, 6—Lieut, H. James, Plymouth, 13th Feb.

Warspite, 76—Capt. C. Talbot, Flag-ship, (g) 2d Dec., at Rio.

Winchester, 52—Capt. Hon. W. Wellesly. 13th Jan. at Jamaica, Flag-ship. (f)

Wolf, 18—Com. W. Hamley, August, at Penang.

Zebra, 18—Com. Rt. Hon. Lord F. C. P. Beauclerc, *act.* Aug. at Penang.

Paid off into Ordinary.

Briton—4th Feb. Portsmouth.

Hyacinth—Re-commissioned.

Victory—Re-commissioned.

Southampton—22d Jan. at Chatham.

VARIETIES.

Admiral Sir Thomas Williams, G.C.B. arrived on 29th Jan., and hoisted his flag (Blue at the main,) on board H.M.S. Victory, as Commander-in-Chief of his Majesty's ships and vessels on the Portsmouth station. The Victory will shortly be paid off (on Friday, we believe,) by Capt. Hyde Parker, and re-commissioned immediately by Capt. E. R. Williams, nephew to the Admiral.—*Ports. Her.*

The Right Honourable Sir George Cockburn arrived at Plymouth, on 28th Jan.; he hoisted his flag on board H.M.S. Vernon, on Tuesday morning, and saluted Admiral Sir Manley Dixon, who returned the compliment with the usual number of guns.—*Ports. Her.*

The King has been pleased to direct letters patent to be passed under the Great Seal of the United Kingdom, granting unto Admiral Sir George Martin, G.C.B., the office or place of Rear-Admiral of the United Kingdom of Great Britain and Ireland, and of the Admiralty thereof, and also of Rear-Admiral of the Navies and Seas of the said United Kingdom, in the room of Admiral Sir. T. Foley, deceased. —*Ports. Her.*

The King has been graciously pleased to nominate and appoint Admiral Sir Davidge Gould, Knight Commander of the most Honourable Military Order of the Bath, to be a Knight Grand Cross of the said Order, in the room of Admiral Sir Thomas Foley, deceased. —*Ports. Her.*

Trade of Liverpool.—The customs' duties received at this port during the last year, amounted to nearly four millions sterling, giving an excess of £325,000 over those of the preceding year. As the total increase in the kingdom was only £223,167, not only must the whole of that increase have taken place in this port, but the deficiences of other places must have been compensated for, by the improvement of the trade of Liverpool. The increase would have been much greater, but for the cholera.—*Liverpool Times.*

Saturday the despatches were closed at the East India House, on 26th Feb. and delivered to the pursers of the following ships:—Warren Hastings, Captain Thomas Sandys, and Buckinghamshire, Captain C. Shea, for Bengal and China.—*Ports. Herald.*

His Majesty has conferred the honour of Knighthood on Rear-Admiral Edward King, and invested the gallant Admiral with the Royal Hanoverian Order.—*Plymouth Herald.*

Loss of his Majesty's Brig Forester—St. Martin's Island, Scilly.—On the 13th Feb. his Majesty's Brig Forester, parted from all her anchors, and was driven on shore on Crown Bar, and from thence to Couther's Point, where she was bilged. The Commander, Lieut. W. H. Quin, at the time she parted, was on shore for the purpose of procuring an anchor and cable, in lieu of the one lost on the previous day; but finding the brig had parted before he could embark, he immediately made sail in a pilot boat, and had not proceeded far when the gig belonging to the pilot boat swamped, and, from the tremendous hurricane that was raging, he unfortunately failed in getting on board, and was driven past the ship. In a very short time the sails of the boat were blown to pieces, but he succeeded in getting three volunteers from her to proceed in the punt, and was at last driven on shore on St. Martin's Island, Scilly, (after having been several hours on the water,) and, it will readily be supposed, in a state of great exhaustion. Shortly after he left the pilot-boat, she went ashore on the rocks, where she was wrecked, and it was with the utmost difficulty that the crew belonging to her saved their lives. On the brig getting on shore on the rocks, the swinging boom was got out, and the gunner (Mr. Shallo) took a line, and endeavoured to take it on shore, but unfortunately the boom struck him against the rock so severely, that he was obliged to abandon the attempt, and was dragged almost exhausted on shore by the preventive men. Mr. B. A. Wake, midshipman, then secured a line, and made it fast around him, and at the risk of his life dashed on the boom, and succeeded in giving the line to the people on shore, by which means a stout hawser was hauled to land, by which most of the ship's company saved themselves, thus effecting a landing on the rocks through the surf. Not knowing the state of the tide, fears were entertained that the brig would drift off the Point again, and the commanding officer, in consequence, gave orders for the men to get on shore as quickly as possible; but the tide being ebbing, she was left at low water high and dry, and, with the help of the people on shore, nearly all the stores, &c. have been taken out of the ship; and, as she is not much damaged, they hope, when she is clear, to haul her off the rocks to the sandy beach. The escape of the Commander in the boat, after the other two had been wrecked, was little short of a miracle, being a mere cockle-shell, and exposed to the tremendous sea that was running. The large free-trader Providence, of 700 tons, was also driven from her anchorage to Crown Bar, where she now lies; and nearly all the pilot-boats belonging to the different islands have also been wrecked.—*Ports. Her.*

The boisterous weather of the present week has caused disasters in several parts of this neighbourhood. The sloop Prosperous, King, Master, laden with oats at Emsworth, for Littlehampton, was caught in the gale before she rounded the Bill, and was driven on the Mixen rocks, where she beat to pieces; the crew gained Selsea beach in a boat. The Badajoz, of Lymington, M. Stavely, Master, coal laden, after striking on the rocks and losing her rudder, came on shore opposite the Crown Inn, and settled in the sands about 200 yards from high-water mark. This vessel is expected to float again when lightened. The John and Amelia, of and from Sunderland, also coal laden, was driven ashore at Bracklesham. Such was the violence of the waves, that this vessel is literally on the beach. No lives were lost in either ship, but one man dangerously hurt by a fall he received in getting ashore at Bracklesham, owing to the breaking of a rope. Three other colliers were driven on shore to the eastward of Littlehampton.—*Southampton Paper.*

H.M. steam-vessel Salamander, 4, Com. H. T. Austin, arrived at Chatham on Monday, having the Hawke, 74, in tow, from Sheerness, to be repaired. She afterwards took the Gloucester, 50, from Chatham to her moorings at Gillingham, and left the Medway on the following day.—*Portsmouth Herald.*

H.M. steam-vessel Carron, 2, Lieut. J. Duffil, is now at Plymouth, for the purpose of having new paddle-wheels applied, instead of those of a new construction which we noticed in a former paper, on the plan of Mr. Galloway, but which have since been found inefficient in a seaway, and therefore condemned. The vessel is in a perfect state of repair. The new wheels will also be on a new construction by the same engineer.—*Portsmouth Herald.*

Extraordinary Effect of a Chain Cable.—Early on the morning of the 15th inst. the wind blowing a gale from the N.N.W. the James schooner, Trewavaws, of Penzance, bound to St. Michael's, being at anchor at Spithead, parted from her best bower cable, and on giving her chain upon her second anchor, that broke also, at about three fathoms from the ring of the anchor. The James then drove towards the edge of the Horse. From the darkness of the night it was impossible to ascertain how fast she was drifting, and, under an idea that she was still holding on by her second anchor, they gave her seventy fathoms of chain, which brought her up. Both her anchors were afterwards found on the spot where she was anchored, at least a mile from the spot where she was brought up, and, by the spirited and persevering efforts of the Master (Wm. Judd) and crew of the Owner's Delight, both were recovered, and put on board the schooner.

The following are from Quebec papers:—

Quebec," *Dec.* 3. The Diana, Richd. Watson, and Cornwall, got into winter-quarters immediately.—*Dec.* 5. Capt. Bourchier, arrived this afternoon, reports a brig lying on the south side of the reef at the lower end of the Isle aux Coudres, in a very perilous situation. The vessel is dry at low water, and might be discharged, but, should it blow strong from NE, she must go to pieces. A large ship is in the Crescent La Pardrie, in the upper part of the north side of the island. A brig is safe at the lower end of the island. A brig, supposed to be the Jonah, is at St. Francois, at the Island of Orleans. —*Dec.* 6. The James Laughton got clear. The pilot returned yesterday, having left her below Green Island. This vessel, with the Mountaineer, bound to London, rode out the gale. It is thought the vessel at Isle aux Coudres will not get away.

The Mountaineer is a total wreck three miles below Cape Chat, after being three days in the ice. The Captain is below, saving what materials he can.

New Ships.—The business doing in this line is about the same as last year. Nine vessels, principally barks, and averaging about 450 tons each, are in progress of building at Quebec. Nearly all will be ready for launching at the opening of the navigation. Price per ton, nominal.

The following is an account of some of the missing ships:—

"Captain Yanden, of the brig James, thence for Newfoundland, had arrived from Coudre Island; the cargo of the James had been landed at Coudre, except the beef and pork, which remained on board the vessel in perfect safety.

"The Sir John Beresford and Rosalind were at Coudre, (the latter distant about two miles from the James, on the south-east end,) and were discharging night and day. Captain Yanden left them on the previous Monday, at two P. M., and crossed to St. Paul's Bay, at the imminent risk of his life, where he safely arrived at twelve o'clock at night. Captain Yanden brought letters from Captain Collins, which report favourably of the situation of the Sir John Beresford, and the Rosalind was supposed to be in a safe place."

(From a Correspondent.)—The following curious dialogue may amuse some of your readers. A ship of war coming home the other day from a

foreign station, hailed a merchant brig in the Bay of Biscay, to learn the news:—What port are you last from?—Portsmouth. Any news?—Nothing but the Port Admiral is dead. Is there another appointed?—Yes. What is his name?—Sir Thomas Williams. What is the name of his Captain?—Williams. Do you know the Secretary's name?—Williams. Who commands the Marines now?—Sir Richd. Williams. The officer who hailed the brig got into a rage, at hearing the name of Williams so often repeated, thinking the master of the vessel was laughing at him, and threatened to put a shot through his main-sail; but the master with an oath assured him it was true, and he was suffered to depart. However, all on board suspected it was a hoax, till at length they arrived in port, and learnt the curious fact.—*Ports. Herald.*

Frightful Shipwreck. — During the heavy gale of wind from W. S. W. on Saturday night, a brig, which was afterwards discovered to be the Ann, of Whitehaven, was observed to be in distress from the Water-guard station at Ballyheigh. She made some exertions to gain Tralee Bay, but in vain, owing to three of her hands being washed overboard off the Hogs. In approaching Ballyheigh Bay the mast and yards were carried off by the board, and three more of the crew lost; and another, the seventh, a man of the name of Smith, was seen rolling in the surf, almost exhausted, when, fortunately for the poor fellow, Thomas Griffin, an extra man of the coast guard, and a native of Tralee Spa, happened to see him, and notwithstanding the tremendous sea, which then rolled mountains high, saved the life of Smith, to the great danger of his own. The bodies of the captain and two of the crew have been found since Sunday. Too much praise cannot be given to Griffin for his humane and extraordinary exertions on this occasion. The vessel is a total wreck.—*Tralee Mercury.*

The ships which were ordered by the Admiralty to be completed for commissioning are in a very forward state. By the latter end of the week, the Bellerophon, 74, and President, frigate, will be nearly or quite complete, as will also be the Ganges and Vindictive in about a fortnight or three weeks. The Bellerophon will be undocked early in the week. She will be followed by the President.—*Portsmouth Herald.*

A Court Martial assembled on Friday, on board H.M.S. Victory, Flag-ship in this harbour, President, Rear-Admiral Sir Michael Seymour, K.C.B. Members, Rear-Admiral Sir Fred. Lewis Maitland, K.C.B. Admiral Superintendant of H.M. Dockyard; Captains Hyde Parker, of H.M.S. Victory; John Duff Markland, of H.M.S. Briton; Robert Tait, of H.M.S. Spartiate; and Thomas Hastings, of H.M.S. Excellent; to try Lieutenant John Douglas Campbell Lamont, of the Royal Marines, serving on board H.M.S. Briton, on the following charges preferred against him by Lieutenant Frederick Patten, the Senior Lieutenant of that ship, viz:—

First—For swearing at him in a most provoking, insulting, and disrespectful manner, at the gun-room table, on or about the 8th of November, 1832.

Second—For sending a verbal challenge to him by Second Lieut. Edward Parke, of the Royal Marines, on the 21st of January, 1833, or thereabout.

Third—For threatening him on the quarter-deck, when ordered under arrest by Captain J. D. Markland, on or about the 22d of January, 1833, that he should demand satisfaction of him on the ship being paid off.

James Hoskins, Esq. attended as Deputy Judge Advocate, and T. A. Minchin, Esq. as professional adviser of the prisoner.

The following was the sentence of the Court:—

"Pursuant to an order from the Right Hon. the Lords Commissioners of the Admiralty, dated the 29th Jan. last past, and directed to the President, and setting forth that Rear-Admiral Sir Frederick Lewis Maitland, K.C.B. had transmitted to their Lordships a letter, dated the 28th January, 1833, and addressed by Lieutenant Patten, the Senior Lieutenant of H.M.S. Briton, to John Duff Markland, Esq. C.B. Captain of the said ship, preferring the following charges against Second Lieut. John Douglas Campbell Lamont, of the Royal Marines, serving on board the

Briton." (The charges are here repeated, but it is unnecessary to print them twice.) "The Court proceeded to try the said Second Lieutenant J. D. C. Lamont on the said charges preferred against him by the said Lieut. Frederick Patten, and having heard and examined the evidence adduced in support of the prosecution, and also having heard what the prisoner alleged in his defence, and having maturely weighed and considered the whole, the Court is of opinion that the whole of the said charges have been proved; and the Court doth adjudge the said Second Lieut. John Douglas Campbell Lamont to be dismissed from his Majesty's service, and he is hereby dismissed from his Majesty's service accordingly."

PROMOTIONS AND APPOINTMENTS.

Promotions.

Captain—J. Lihou.

Commander—Hon. W. Keppel.

Retired Commanders—F. Frankling; B. Leigh.

Appointments.

Captain Sir C. M. Schomberg, K.C.H. is appointed Lieut.-Governor of the island of Dominica—and Captain George Tyler is appointed Lieut.-Governor of the island of St. Vincent's in the West Indies.

African, 1, St. V.—*Assist.-Surg* R. L. Harrower, M.D.

Alfred, 50—*Purser*, H. Brenton.

Alligator, 28—*Assist.-Surg.* J. G. Harrison.

Blanche, 46—*Capt.* W. Burnett, *Com.* H. Stroud.

Briseis, 6—*Assist.-Surg.* T. Hunter.

Buffalo—*Assist.-Surg.* J. M. Hamilton; *Mate*, J. Bowler.

Comus, 18—*Mast.* T. Basely.

Conway 28—*Lieut.* C. Serjeantson.

Coast Guard—*Lieuts.* N. C. France, W. M. Hearle, H. Lawrence.

Diana, 46—*Gunner*, J. Read.

Donegal, 78—*Lieut.* W. H. Johnstone.

Druid, 46—*Assist.-Surgs.* S. P. Martyn, H. Williams.

Excellent, 58—*Lieuts.* G. Bott, Hon. D. Hastings, C. Napier; *Mids.* Messrs. J. Pritchard, Branch, Prevost.

Hyacinth, 18—*Com.* T. P. Blackwood; *Lieuts.* J. Gore, W. Dickey; *Mast.* J. Basely; *Surg.* C. Patison; *Purser*, J. Colwell; *Assist.-Surg.* A. Muirhead; *Mast.-Assist.* J. N. King; *Mate.* H. G. Backhouse.

Jackdaw, 4, S. V.—*Lieut.-Com.* E. Barnett; *Mates*, H. Gaitskell, R. Milbanke; *Mids.* T. R. Skottowe, H. Williams; *Mast. Assist.* J. G Nops.

Malabar, 74—*Clerk*, J. R. Hildebrand.

Melville, 74—*Lieut.* T. Hope (*b*).

Pelorus, 18—*Mast.* D. Quinton.

Rover, 18—*Mast.* R. Hoppen.

San Josef, 110—*Assist.-Surg.* O'N. Ferguson.

Scarborough, 74—*Carp.* J. Smith.

Spartiate, 74—*Lieut.* T. M. Rodney; *Mast.* W. White (*b*); *Purser*, S. Wadland; *Assist.-Surg.* C. Alison, M.D.

Sphynx, 4—*Boatsw.* W. Maxwell.

Sylvia, 1, *Rev. Ct.*—*Lieut.* J. W. Brown.

Talavera, 74—*Lieut.* T. B. Brown.

Talbot, 28—*Mast.* R. Browne.

Thunder, 10—*Boatsw.* J. Perry.

Tyrian, 4—*Boatsw.* R. Rogers.

Victory, 104—*Capt.* E. R. Williams; *Lieuts.* C M. Forster, A. Slade, C. T. Rooke, T. V. Watkins, C. Richards; *Mast.* R. Yule; *Surg.* F. M. Chivers; *Chaplain*, Rev. G. Fisher; *Purser*, J. P. Bailey; *2d Mast.* C. L. Spence; *Assist.-Surgs.* A. Kilroy, W. W. Wright; *Capt. Marines*, T. Morris; *2d Lieut.* A. D. Dorratt; *Clerks*, T. P. M'Namara, C. Hyllian, R. A. Clarke; *Super. Assist.-Surg.* C. Rankine, G. Moore, T. Brenan, F. Maunsell, M.D.

Zephyr, 4—*Boatsw.* J. Smith.

Ordinary *at Portsmouth.—Chaplain*, Rev. T. Ferris.

Ordinary *at Plymouth.—Purser*, A. Murray.

Secretary to Admiral Sir T. Williams, T. H. Williams; *Clerks*, Messrs. Seddal and Thornton.

Secretary to Admiral Sir William Hargood, T. F. Jessop.

NEW MERCHANT VESSELS. FROM LLOYD'S REGISTER FOR 1833.

Reported to 20th February.

VESSELS.	RIG.	WHERE BUILT	TONS.
Cornelia	Schooner	Yarmouth	103
Eagle	Smack	Aberdeen	64
Esther	Ship	Workington	351
Isabella	Sloop	Portaferry	55
Limerick Lass	Schooner	Southampton	173
Lively	Snow	Dumbarton	165
Martha	Schooner	Shoreham	172
Mary	Ship	Maryport	306
Mary and Ann	Barque	Chester	212
Rapid	Snow	Gainsbro'	276
Sultana	Brig	Yarmouth	183
Sybilla	Ship	Bristol	385

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1833.

Continued from page 109.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
106 Abeona	Cole	Liverpool	Wilmgton.	At Sea	24 Nov.	6817 Abandoned.
107 Ann	Prendergast	Liverpool	Limerick	Tralee Bay	2 Feb.	6820 1 Crew saved.
108 Betsey	Howlett	Liverpool	Rouen	Not heard of	since	5 Dec last, 6817.
109 Britannia	Black	Cephalonia	—	Sicily	4 Jan.	6814 2 crw. drwnd.
110 Charlotte Gallant	Barth	Miramichi	Quebec	St. Laurence	13 Oct.	6814 Total.
111 Cossack	Armstrong	London	Shields	Flambro' Hd.	31 Jan.	6818 Crew saved.
112 David	—	Quebec	Cork	St. Laurence	10 Dec.	6817 Sold for £152.
113 Diamond	Dawson	Wexford	Liverpool	Off Pt. Lynas	8 Feb.	6820 Crew saved.
114 Dove	—	StMichael's	—	Villa Franca	13 Jan.	6817 Crew saved.
115 Edward and Amelia	Tobin	StJohn' N B	—	Horton Bluff	29 Dec	6817 Crew saved.
116 Eliz and Jane	Shawle	Swansea	Bridgewatr	Off Minehead	8 Feb.	6820 Crew saved.
117 Emerald	Tucker	Quebec	London	Matan	9 Dec.	6817
118 Esther	Gibson	Dublin	Harrington	Not heard of	since	20 Dec. last, 6817.
119 Facility	Dunn	Dundee	Morrison h.	Crail	1 Feb.	6820
120 Fame	Law	Ayr	Londonder.	Ennishaven	21 Jan.	6816 1 drowned.
121 Flora	Parlie	Liverpool	Wexford	Anglesey I.	13 Jan.	6813 Crew saved.
122 Fortuna	Paulsen	London	Dram	Ageroe I.	23 Dec	6814 Total.
123 Friends	Youngson	Montrose	London	Shields	18 Jan	6814 Total crew sd.
124 Henrys	Phillips	Sunderland	Portsmouth	Sndwn B., I. Wight	15 Jan.	6813 Crew saved.
125 Hume	Fox	—	—	Off Newfdld.	6 Dec.	6816
126 Jas. Cropper	Gary	Bristol	Philadelph.	Delaware	15 Dec.	6814 Crew saved.
127 Jas. Florence	—	StJohn' N B	England	At Sea	Dec.	6819 Abandoned.
128 John	—	Liverpool	—	Hilbury I.	7 Feb.	6820 1 crew saved.
129 John & Mary	Mumford	Cork	Plymouth	Cornwall C.	7 Feb.	6820 Cr.&cargo sd.
130 JnoBushman	Hindmarsh	StJohn' N B	London	43 N 55 W	15 Jan.	6817 Abandoned.
131 Jona	Smith	StLaurence	London	St. Laurence	1 Dec.	6816 By ice.
132 KeithSteward	Willingham	Perth	London	Shields	18 Jan.	6814 Total crew sd.
133 Kircudbright Castle	—	Dundalk	Liverpool	Dublin Bay	Feb.	6819 Mast,&mate sd
134 Lark	—	—	—	Dominica	21 Dec.	6819
135 Logan	Bunkley	Savana	Liverpool	33 N 66 W	—	6818 By fire,cw.sd.
136 Lord Ravensworth	Wingfield	Archangel	Newcastle	Norway	Dec.	6814 Cw.4drowned
137 LordS.Helens	Alnwick	—	Miramichi	Horse Shoe	Dec.	6819
138 Lucy Davidson	Stewart	—	—	Off Scarboro' West Indies	15 Dec.	6819 Crew saved.
139 Luna	M'Donald	London	Jamaica	St. Domingo	21 Nov.	6817 Crew saved.
140 Martha	M'Kinley	Greenock	Limerick	C. Ireland	21 Jan.	6815 Abandoned.
141 Mary-Ann	Laidly	Miramichi	Liverpool	Newfoundld.	27 Nov.	6817 Crew saved.
142 Mercury	—	Poole	—	PlacentiaBay	2 Dec.	6814
143 Moffatt	—	Dundalk	Liverpool	West Hoyle	3 Feb.	6818 3 cw.drowned
144 Mountaineer	Valentine	Aberdeen	—	Seaton rock	2 Feb.	6818 Crew saved.
145 Mountaineer	Jackson	Quebec	Chatham	C. Chat	Dec.	6818 Crew saved.
146 Onyx	M'Arthur	Waterford	Waterford, N.S.	Marguerite	Dec.	6816 Crew saved.
147 Ospray	Webster	Pictou	New York	Chebcto B.	1 Dec.	6815 Total.
148 Parkfield	—	—	—	Douglas Bay	1 Feb.	6818
149 Perseverance	—	Liverpool	Newfdland	LittleCatalin.	28 Dec.	6818 Crew saved.
150 Prince Cobourg	Linklater	Ballina	?	Not heard of	since	Oct. last, 6820.
151 Rebecca	Lawrie	Greenock	Quebec	C. Chatham	Dec.	6814 Sold for £600.
152 Rosalind	Boyle	Quabec	London	St. Laurence	2 Dec.	6815 Cargo part sd.
153 Rose	Wallis	—	Liverpool	—	17 Jan.	6815 Cargo saved.
154 Rosewall	Rosewall	St. Ives	Leghorn	Africa Rocks	21 Jan.	6818 Crew saved.
155 St. Ninian	Scotland	Newry	London	Shields	28 Jan.	6814 Total crew sd.
156 Scott	Wilson	—	Miramichi	Horse Shoe	Dec.	6819
157 Sir E. Codrington	—	Quebec	London	St. Laurence	—	6817 Sold for £703.
158 Thomas	Walker	StJohn'N B	Key West	—	29 Oct.	6817 Crew saved.
159 Thomas	Steward	Sunderland	London	Shields	18 Jan.	6814 Crew saved.
160 Unity	Yeo	Bury	—	Off Lundy I.	12 Jan.	6813 Crew saved.
161 Unknown	—	—	—	Shannon	3 Feb.	6820
162 Walter Mathews	Way	Cork	London	Mounts Bay	24 Jan.	6816 Crew saved.
163 Wanderer	M'Kenzie	Bordeaux	Leith	Fife Coast	2 Feb.	6819 1 cw.drowned
164 Woodrop Sims	—	—	—	Barbary	—	6818 Whaler.

VESSELS DETAINED BY ACCIDENTS, &c.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE DETAINED.	WHEN.	PARTICULARS.
Christopher	Knight	Liverpool	Miramichi	St. Laurence	Dec.	6819
Jas. Laughton	—	Quebec	Liverpool	St. Laurence	Dec.	6815 By ice.
John	Bulmer	London	Miramichi	St. Laurence	18 Dec.	6819
Miriam & Jane	Noble	Quebec	Newcastle	RStLaurence	Dec.	6815 By ice.
Patience	Barrett	Malta	Plymouth	Gibraltar	17 Jan.	6818 Damaged.
Prince Regent	Bosena	Newport	—	Chatham	Dec.	6819

VESSELS SPOKEN AT SEA.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE SPOKEN. ° °	WHEN	PARTICULARS.
Balmarina	—	Clyde	St John N B.	48 N 34 W	14 Dec.	6819 Running f.aPt
Britannia	—	Liverpool	New York	47 N 26 W	13 Jan.	6820 By Seahorse
Centaur	—	Bristol	Bengal	33 S 7 W	7 Sept.	6816 By Caroline
Columbia	—	Liverpool	Bombay	16 S 30 W	9 Dec.	6820
Exmouth	Warren	London	Bengal	24 S 30 W	11 Dec.	6820
Favorite	—	London	St. Sea	16 S 30 W	9 Dec.	6820
Ganymede	Royal	London	Columbia	29 S 36 W	27 Nov.	6820
Georgiana	Harby	London	Berbice	25 N 32 W	7 Jan.	6820
Grecian	Cockerill	Liverpool	Charleston	31 N 62 W	4 Jan.	6819 Distress. Sup. run. f. Bermuda.
Isabella	—	—	Lisbon	50 N 7 W	18 Jan.	6816 Out 93 days.
Laburnam	—	Liverpool	Africa	49 N 13 W	13 Jan.	6819
Mars	—	Greenock	West Indies	24 N 33 W	30 Nov.	6814
Pitt	—	Bristol	Africa	5 N 23 W	13 Dec.	6819
Rob. Isaac	Varnum	Liverpool	Savana	32 N 73 W	27 Dec.	6819
Sir E. Hamilton	—	Hull	New York	41 N 53 W	22 Dec.	6819
Susan	—	Plymouth	Philadelph.	38 N 58 W	25 Dec.	6813 In distress.
Symmetry	—	Kinsale	StJohnsN B	47 N 32 W	18 Jan.	6814
Topaz	Morton	London	Demerara	24 N 33 W	6 Jan.	6820

Shipwreck.—We regret to say that advices from Newfoundland bring the melancholy intelligence of the total loss of the Mercury, Cockram, master, belonging to Messrs. Neave and Penney, of Poole. She sailed from Bilboa for the island, and on entering Rock Harbour, Placentia Bay, on the 2nd December, encountered a violent snow storm, in consequence of which she was driven on the rocks, and became a total wreck. Two men were drowned; but the master and the remainder of the crew clung to the mast, were washed ashore, and providentially saved. The Mercury was laden with provisions, chiefly bread and flour, for the inhabitants of Placentia Bay, who, in consequence of the loss, are now suffering great distress from the scarcity of provisions among them.—*Portsmouth Herald.*

ADMIRALTY ORDER.

ADMIRALTY ORDER.

Memorandum.

"*Admiralty, 6th February*, 1833.

"The Lords Commissioners of the Admiralty desire that the strictest attention be paid to the 30th article of the Purser's Instructions, page 27, in which it is directed that 'When the issue of salt meat is renewed after fresh meat has been served, the salt meat on the first day of issue is not to be of the same species as that issued on the last day before fresh meat was issued,' in order that the issue of salt beef and salt pork on board His Majesty's ships may be equalized, as was intended by the said Instructions.

"By Command of their Lordships,

"JOHN BARROW.

"To all Captains, Commanders, Commanding Officers and Pursers of His Majesty's Ships and Vessels."

MOVEMENTS OF TRANSPORTS.

AMPHITRITE—Lieut. W. R. Cooley, Deptford.
ARAB—Lieut. W. C. Harris, Mauritius.
HOPE—Lieut. W. Ryder, Lisbon.
MAITLAND—Lieut. G. Sanders, Lisbon.
NUMA—Lieut. W. H. Brady, Plymouth.
PRINCE REGENT—Lieut. C. H. Binstead, Mediterranean.
STENTOR—Lieutenant E. B. Davison, South America.
SYLVIA—Lieut. G. N. Wesley, Deptford.
WANDERER—Lieut. A Young, Deptford.
WILLIAM HARRIS—Lieut. J. H. Stevens, Coast of Africa.

The Resident Agent for transports at Deptford, Lieut. Bailey, is to receive an addition to his salary for taking charge of transport stores at Deptford.

The resident Agent at Portsmouth, Lieut. Spence, and the resident Agent at Gibraltar, Lieut. W. Scrymgour, will discontinue their duties in the transport department on the 1st of April, as those offices will then be abolished.

Births.

In Hertford-street, Mayfair, the lady of Captain St. John Mildmay, Royal Navy, of a daughter.

On the 27th inst., near Rye, Sussex, the lady of Lieutenant G. W. Tomlin, R.N., of a daughter.

At Dartmouth, the lady of Lieut. A. W. Ford, R.N., of a daughter.

At Ilfracombe, the lady of Lieut. Robinson, R.N., of a son.

On the 11th inst., at Swanage, the lady of Dr. Carruthers, Surgeon, R.N., of a daughter.

On Monday, in Gloucester-place, the lady of Lieut. Walker, R.N., of a son.

At Southdown, the lady of Captain William Walker, R.N., of a daughter.

The lady of Captain Rivett Carnac, R.N., of Baker-street, of a daughter.

On the 2d inst., on board the Dreadnought, off Greenwich, the wife of Captain Bowers, R.N., of a daughter.

On the 7th inst., at Southsea, Mrs. Timpson, wife of Captain Timpson, R.M., of a daughter.

On the 15th Feb., at the Admiralty, the lady of the Right Hon. Sir James Graham, Bart., of twins, a son and a daughter.

Marriages.

On the 16th inst., at Berrien, by the Rev. Maurice Lloyd, Rector of Montgomery, Lieut. John Rainier, R.N., of Reading, to Harriette, eldest daughter of the Rev. John Jones, of Brithdir Hall, Montgomeryshire.

On Thursday last, at Stonehouse chapel, by the Rev. E. Greaves, Mr. Lowes, R.N., to Miss Condy, of Emma-place, Stonehouse.

At Stonehouse chapel, Mr. H. Gill, R.N., to Miss Jane Menhennett.

On the 7th inst., in London, at St. Sepulchre's church, by the Rev. R. Wall, Mr. John Percy Moore, eldest son of John Moore, Esq., of Plymouth Dock-yard, to Elizabeth Sarah, youngest daughter of Mr. Samuel Porter, of St. Stephen's, Cornwall.

On the 8th inst., at Mylor, Lieut. Downey, of H.M. packet brig Briseis, to Miss Symons, daughter of R. Symons, Esq., of Little Falmouth.

On the 22d ult., at Armagh, W. L. Kidd, M.D. and Surgeon R.N., to Margaret, relict of the late Colonel Wall, of the Royal Artil.

On Saturday last, at St. Leonard's church, Exeter, by the Rev. Edward Holditch, George Read, Esq., Lieut. R.N., K.T.S., to Mary J. Deane, widow of Henry Deane, Esq., of Mount-Radford, Exeter, and Caversham, Oxfordshire.

At Sithney, near Helleston, on Tuesday, Lieut. Brewer, R.N., to Miss Mitchinson.

Dr. Richardson, R.N., the celebrated traveller, to Mary, the daughter of John Booth, Esq., of Ingoldmells, Lincolnshire.

Deaths.

At Shoebury, Essex, on the 29th ult., Commander Milbourne, R.N.

On Saturday last, at Titchfield, Captain James Short, aged 52, on the half-pay list of the Royal Marines.

At Ramsey, Isle of Man, Lieutenant W. Monk, R.N.

Lately, at Shannon Grove, Lieut. Richard M. Waller, R.N., son of Bolton Waller, Esq., Castletown, and late of his Majesty's ship Champion.

On the 14th ult., at Newcastle, Castlewellen, county Down, Captain W. Daniell, R.N., much lamented by all his relatives and friends, as well as those who had the honour of his acquaintance. He possessed a noble and generous heart, was a kind and steady friend, a brave and excellent officer, and in him the service has lost one of its brightest ornaments.

Very suddenly, in the 73d year of his age, J. Thorne, Esq., of Old Stratford, Northamptonshire, sincerely and deeply regretted by his widow and family. He served forty years in the Naval Civil Service of his country, and, during that period, performed his duty with the most honourable and unimpeached integrity. He was father to Captain J. Thorne, R.N.

On the 8th inst., at Jersey, Lieut. Benjamin Chester, R.N.

On the 10th of November, of yellow fever, on board his Majesty's ship Minx, off the Isle of Pines, Mr. Leonard Farington Coxe, R.N.

On Tuesday last, at Woolwich, First Lieut. Maiden Gray, of the Royal Marines, leaving a widow and young family, and regretted and esteemed by all who knew him.

At 53, Albany-street, Soho-square, on Monday last, Captain Thomas Wilson, of the Royal Marine Corps.

LONDON: FISHER, SON, AND CO. PRINTERS, NEWGATE-STREET.

THE

NAUTICAL MAGAZINE,

&c.

APRIL, 1833.

HYDROGRAPHY.

Note.—All Bearings are Magnetic, unless otherwise stated.

24. OBSERVATIONS *on the* NAVIGATION OF THE BLACK SEA.

(Continued from page 121.)

IN the continuation of Captain Middleton's remarks on the navigation of the Black Sea, our nautical readers who frequent that part of the world will find many hints well worth their attention. The explanation given therein of the nature and effects of the currents there, if attended to, will be of much service in its navigation; and we have endeavoured to assist Captain Middleton in enabling navigators to surmount one of its principal difficulties, that of making the entrance of the Bosphorus, by giving them the accompanying sketch of it. The great difficulty of making the Bosphorus when running out of the Black Sea, is the cause of the frequent loss of vessels. The two views which accompany our present number are from the pencil of Mr. C. J. Tyers, late of H.M.S. Blonde, and were taken, with several others, which are highly creditable to that gentleman, in the recent visit of this ship to the Black Sea. We have already expressed our intention of illustrating some of our future articles in Hydrography with similar specimens.

We are next anxious to correct a small error here which was inadvertently made in our last number. In alluding to the entrance of the Dardanelles from the passage inside Tenedos, it should have been said, that the directions for avoiding the shoals off the Rabbit Islands *are good*, instead of the contrary, excepting with reference to the tumuli as before observed. We will now proceed with Captain Middleton's remarks:—

NOTWITHSTANDING that this Sea has been frequented so many years by English vessels, the navigation of it is yet involved in much obscurity; and the most mistaken notions as to the nature of it are abroad, which no directions that I have met with tend to remove. Of the many hundreds of foreign vessels, that trade annually in this Sea, there perhaps is not one in a hundred, that, from their nature and equipment, can do so, except in fine weather, and with a fair wind: the idea of encountering a contrary gale, is with them quite out of the question; and if they cannot find a port under their lee, they are lost. Of the few which may be fit to weather a gale, the probability is, that they are commanded by such people, as, from their habits, and the general practice among them in Mediterranean navigation, have no idea of doing otherwise than to bear up, on the first appearance of what they call bad weather; added to this, there is hardly one among them, that can form an idea where he is, a very few hours after losing sight of land.

A very erroneous opinion prevails also respecting the western shore of this Sea. It is asserted, that there is no safe anchorage for vessels on it, but to those who have frequented them, the anchorages along the west coast are well known to be quite safe; and with respect to vessels that delay their departure from this dreaded Sea till it is late in the season, it is common for them to anchor in them all, one after the other, as they venture to creep down the coast; till they succeed at last in completing a passage to Constantinople, three months, and even more, after they have first started from their loading port of Odessa, the Danube, &c.

The thick weather supposed to prevail in this Sea, is also another imaginary danger. There are fogs in it occasionally, but these never last long, and, like fogs every where else, are unaccompanied by much wind; these in fact mostly occur in spring and summer, when the weather is otherwise extremely fine; and are soon dispelled by it, and the moderate east wind which usually accompanies them. Heavy gales are never accompanied with thick weather in this Sea, unless a dark cloud passing quickly with a squall may be called so. And I really believe, that this Sea is not subject to worse weather, either as to violence or frequency of wind, than the Archipelago; nor do the gales last longer.

Currents are another source of dread, and cannot be estimated so as to enable a navigator to do more, than always to conclude, that he may be wrong in his supposed situation; in the absence of celestial observations. From my own remarks, I have arrived at the following conclusions respecting the currents in the Black Sea. The water discharged out of every river that falls into it, has a tendency to be drawn towards the Bosphorus; as they join the Sea, they set fairly out during calm weather; and merge into the great body of the waters. But, supposing the wind to blow fresh along shore, at right angles with the stream where it disembogues; the current is set in the same direction with the wind, which, perhaps, alters, the day after, to quite an opposite point, and the current follows it. This I have particularly observed, having been anchored for several months very near the junction of a river with the Black Sea: I believe that every river which falls into this Sea, (or any other, free of tides,) is more or less so operated on. And, as from the very irregular nature of the coasts of the Black Sea, twenty different winds may at the same time be blowing on them, I think that the only conclusion which can be formed of the general direction of these currents, is, that they all tend eventually to the Bosphorus; and cannot be reduced to any rule, beyond the opinion that a navigator may form, of the probable direction of each separately, as he passes the vicinity of the rivers, from the wind that happens to blow there at the time.

There is no flow of tide whatever in the Black Sea; the currents, and the direction of the wind, cause occasionally a small difference in the elevation of the water, at different places, which overpowers the influence of the heavenly bodies upon its waters, and cause their effects to be imperceptible.

The Bosphorus has never been known to be frozen over: but it is not so with the harbour of Odessa, which is generally frozen up every winter, as well as the bay, and often ten miles out to sea. Indeed, the whole of this part of the sea to the Dnieper, is usually frozen in the winter months, (breaking up occasionally;) as is also the Danube; causing, of course, some floating ice on breaking up, but this immediately disappears; and, with these exceptions, the Black Sea, generally, is every where free from ice.

Gales sometimes occur in this Sea; but I question if ever they amount to "storms:" their duration is short, for they rarely last more than twelve hours, without considerable abatement of strength. It frequently happens with vessels navigating this Sea, that they cannot find the Bosphorus, if blown out of their usual route along shore, and get bewildered by the variable winds and currents they meet with. But navigating with chronometers obviates all this; and, notwithstanding the idea of thick weather being prevalent, I am confident that, taking all the year round, there is not one day in twenty, that an expert navigator would be at a loss to know his exact situation.

The whole dread of this Sea resolves itself into the difficulty, and often danger, experienced in making the entrance of the Bosphorus. The common method of doing this is to go to Inada; and then, if the weather is not considered favourable, vessels bring up there, and wait until it is so. The coast from thence, for about forty-five miles to the Bosphorus, is a dead lee-shore, with northerly winds; and if a vessel misses the Bosphorus, it is generally fatal to her. A person of experience, however, can hardly fail to make the entrance in this manner: but, that it is attended with danger, is evident, for, with leewardly ships, should the wind increase to a gale, it cannot be matter of surprise, that losses should often occur. The fear of missing the Bosphorus induces masters of vessels to run along shore at only such a distance as insures their seeing it clearly; and if they miss it under such circumstances, certain loss is almost the consequence.

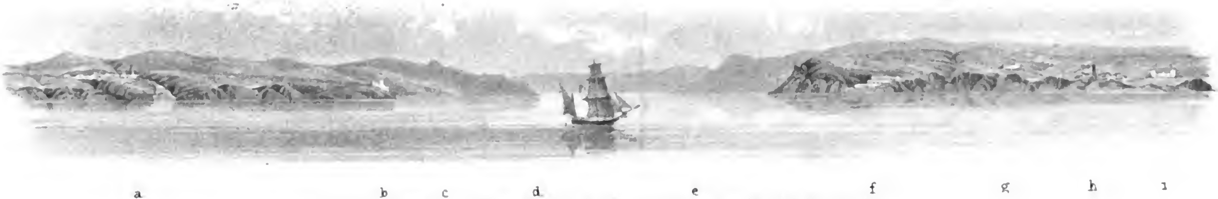
Now, if a man, confident of knowing the exact situation of his ship, would keep out to sea, (I am now, of course, alluding to ships *capable* of keeping the sea,) until he gets the Bosphorus to bear S.W. to W.S.W., thirty or forty miles, and then run for it as on these bearings, it may be seen in clear weather twenty-five to thirty miles; no wind could endanger him for a moment. He should steer directly for the entrance, unless with a scant wind; in which case, he would naturally keep something to windward, judging, that, in addition to its being always more advisable to do so than otherwise, that there may be a current setting to leeward. I fully believe, that the idea of there being *always* a current running to the south and eastward, *across* the entrance of the Bosphorus, is erroneous; it is, however, a commonly received opinion; but, I have not ascertained that the *fact* of its existence has ever been established. I have navigated the Black Sea, in an easterly direction, sailing out of, and making the Bosphorus in this direction: and I have in vain looked for a current from the N.W.; the idea of which existing has, I apprehend, originated in the wish to account for errors in reckoning, on the part of those who have got on shore in overrunning the entrance.

From what I have already said, of the currents of the Black Sea, I think we may fairly conclude upon the great improbability of such a stream. If it is always going *past the entrance* of the Bosphorus when the wind is from the N., it may be asked, what becomes of the water? the wind is from that quarter, in this situation, at least, ten months out of the twelve; and a stream, setting continually along this shore across the Bosphorus, could hardly be left matter of doubt, if it existed: I have in vain looked for it; and I am satisfied it does not exist. It appears to me, that the waters coming from the rivers enter the Bosphorus directly from the sea; a stream, being also set along shore towards the entrance, *from whichever side the wind happens to blow*: the probability being, that this stream is strongest from the N.W., on account of the prevalence of N. winds influencing the waters of the Danube. Whichever way, therefore, a ship may approach the Bosphorus with a fair wind; it is probable she will get ahead of her reckoning: but, I think, it can rarely happen that, under any circumstances, the currents do not all merge into the Bosphorus, without setting *across* its entrance; and, therefore, I can see no reason why, with an east wind, a ship should not make the channel to windward, calculating upon a lee current, as well as doing the same, should the wind be on the other side; only making a greater allowance in the latter case, for the velocity of currents.

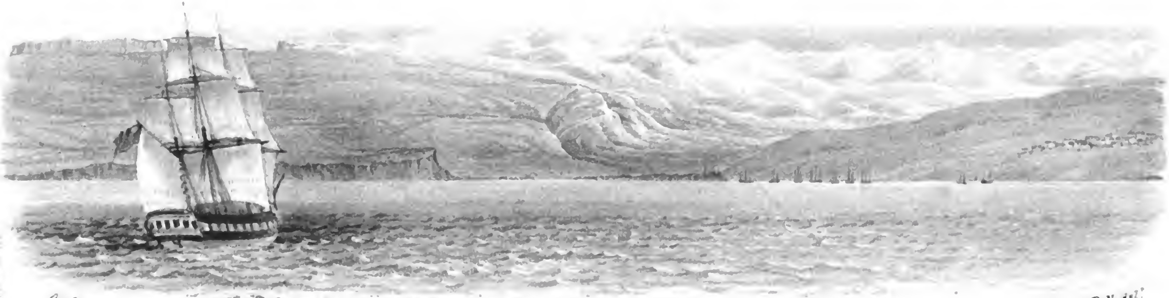
The erroneous notion, generally entertained of the nature of the weather in the Black Sea, even at Constantinople, admits of observation. This place, situated between two seas, is subject, perhaps, to worse weather, and more rigorous winters, than any other in the same latitude in Europe. There is, generally, but little bad weather there until about Christmas, though occasionally strong gales, when it becomes cold, with rain and snow, with short periods of *fine* weather, till May, or sometimes June. It is, in fact, but little better than a winter in the south of England. During all this, a resident at Constantinople (being previously impressed with the general notion of the difficulties of the Black Sea) naturally concludes, that the weather is equally bad there; the wind blowing almost constantly from that direction; whereas, the fact is, that the clouds are impelled *over* that Sea, (except during occasional gales,) until they come in contact with the high land of the Bosphorus, when rain, snow, and thick weather ensues, while it is fine weather in the Black Sea. I have come in three times in winter, and experienced this: I have on all these occasions had fine weather, (strong N.E. wind,) with the sun out; and, until a close approach, and almost indeed entrance into, the Bosphorus, a continuance of it; and on fairly entering, have found a winter's day, with sleet, and rain, and thick weather. I have also observed this, on lying wind-bound up the Bosphorus; and looking out into the Black Sea during bad weather, have observed it quite clear in the offing. The whole coast of the Black Sea, and the high lands about Constantinople, are frequently covered with snow, for months; indeed, the mountains, in many parts along the shores, are covered all the year round; and yet I doubt, if at sea, along all the coast from Constantinople to Georgia, there is ever either frost or snow. I have been laid, at two cables' length from the shore on this coast, in November and December, without a particle of snow falling on board, when the hills to the water-edge have become covered in one night; during which we have had nothing but rain.

Snow, no doubt, falls in the northern parts of this Sea, occasionally. The north shores are cold and bleak; the northerly winds passing many hundreds of miles over a low, barren, bleak Russian country; which is, in fact, the cause of the constancy of winds from that quarter: rushing to the more rarefied atmosphere of lat. 41; and, upon the cultivated fine country about Constantinople; considerably heated during summer, and occasionally all the year round, during the short intervals of southerly winds; immediately after which, the strongest gales from the north are of course to be looked for.

These remarks are only made, with a view of giving a more correct general notion of the navigation of the Black Sea, than at present exists; I will only add, that it is a very deep sea all over it, except on its northern coast. I have frequently attempted to get soundings very near the coast with the deep-sea line, without success. It may be considered a sea almost without a hidden danger in it: I believe that the banks and soundings on the northern parts, as laid down in Norie's new Chart, are tolerably correct.



ENTRANCE of the BOSPHORUS, from the BLACK SEA



On Stone by L. Haghe

C J Tyers R N del.

SEVASTOPOL East by Compass

Published for the Proprietors of the Nautical Magazine [illegible]

References to the View of the Bosphorus.

a. Light and Fort of Asia.—By a chart corrected by Captain Middleton, this Light-house shews two lights, one above the other.

b. c. d. e. Forts. *f.* Fort Europe. *g.* Fort.

h. Light-house of Fanaraki.—By the above chart this shews three lights in a triangular position; and to the westward of it five miles, is another light on an old white castle—a better light.

i. Barrack.

We have also extracted the following from Captain Middleton's Chart:—

Headlands, east of the entrance to Bosphorus, are *White*.

A false entrance of the Bosphorus is about fifteen miles east of the real one.—With the entrance of the Bosphorus bearing by compass W.S.W., the false entrance is very deceptive. It may be known from the true one by observing, that the land to the westward of it is high, rugged, and irregular, whereas that land is to the eastward of the true entrance; the land to the westward of which, is not so high, and is more uniform, diminishing gradually to what appears a Cape, which is probably Kara Boroun.

We will now give Capt. Middleton's remarks on Trebisonde, and the passage from Constantinople, that he made in the schooner Syeed Khan.

On leaving the Bosphorus, a ship may steer so as to make the distance as short as possible, as the wind never blows hard directly in-shore, but, if with any violence, is from the N.W. It is not, however, at all unusual to steer in the first instance to the N.E., and make the Crimea, which may, perhaps, answer sometimes in summer, but I see no reason for adopting this course in winter.* The whole coast is exceedingly bold and conspicuous, and can hardly admit of a mistake, if the weather is tolerably clear. Cape Joros may be passed as close as you please, keeping along shore; if at any distance, a stranger may easily miss Platana, it being an inconsiderable place, and I should have passed it without notice, had it not been for seeing vessels at anchor in the roads. Trebisonde will be seen immediately after passing Cape Joros, and an old ruined building standing upon a bold projecting point of the town, on the east side of which is the anchorage. If the wind be off the land, a vessel may pass very close round this point; but if otherwise, she must give it a berth in going in for the anchorage, as the sea breaks heavily upon it; and some rocks, just above water, close to it on the east side, cause a very awkward curling swell to roll into the bay, some distance to the eastward of the point. I lay about a quarter of a mile from this point in five fathoms water, with it bearing by compass W. N.W., and a low point to the eastward E. by S. a cable-length and a half from the shore. I would, however, recommend anchoring a little further to the eastward, say nearly half a mile from the point of Trebisonde, so as to be just clear of some very high land, which, having directly astern of me, caused the land-wind in fine nights to come off in stronger gusts than I think it would a little more to the E. It is excellent holding ground, and quite clear for hempen cables; it will be necessary to moor immediately with an open hawse to the N., the anchors laid well apart, and a good hawser and stream-anchor in-shore as a stern-fast: the wind is so variable here, and coming off the land every night, that if a ship was to swing, she would be continually lying broadside to the swell, and would run the risk, from perpetual changes, of loosening her anchors in the ground, besides the difficulty of keeping a clear hawse. A vessel may hang by her stern-fast without any fear;* there is never any swell, except from the N.; and, although the land-wind comes off pretty fresh sometimes, it is when the water is quite smooth, and during the finest weather. The only bad weather is from the N.W., with gales which may come in with a violence to cause some alarm to a stranger, but it abates quickly on reaching the shore; its continuance outside will send in a considerable swell, which, however, does not come in with any violence, and will not cause any considerable strain upon the cables. When the wind is due north it is very moderate, and in bad weather accompanied generally with heavy rain; and when the mountains to the eastward can be seen quite clear of clouds, the finest possible weather will follow, with the sea perfectly smooth, a gentle breeze all day, varying from N.E. to S.E., and the wind off the land at night, as I believe it invariably is every night during the year.

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* It is not desirable at any period to adopt this route.—H. D. M. Aug. 1832.

These remarks are made from observing the weather at Trebisonde in the months of November and December, 1831, during which I experienced it worse than the people on shore stated it to have been for some years.

N.B.—Since the above was written, I have been twice at Trebisonde, in March, and subsequently from May to August, and each time I have laid in different situations, to ascertain the best anchorage, and am inclined to prefer my first berth, as described in the foregoing directions; and with a small vessel, instead of adopting a more easterly anchorage, I consider that a better situation would be even nearer the town, as well as somewhat nearer the shore astern: a vessel may lie in 3½ fathoms, laying the N.W. anchor in 3, bringing the point to bear something to the N. of N.W. and a fort at the extremity of the town on the beach, right astern. This would be the best winter anchorage.

The shipping of the country, and boats that frequent the place during summer, all take up their berth astern of where I lay in the winter—that is, near the shore, off two old ruins (which have been a church) standing upon a projecting cliff, towards the declivity of the mountain which surrounds the bottom of the bay, there being 3 fathoms water in this direction, very near the beach

Latitude of the Consul's Garden at Trebisonde 41° 1′ 25″ N. } Var. 8° W.
Longitude being assumed................ 39 42 0 E. }

N.B.—The above longitude I think is correct, having found the distance measured by my chronometers, backwards and forwards five times, between Constantinople and Trebisonde, to agree very well with it; although, not having upon any of these occasions had the opportunity of taking sights so soon as I could have wished, after the several periods of my arrival at each place, I cannot be so confident as I might otherwise have been; but having upon all these occasions made the land very exactly, rates for the chronometers having been always obtained at the periods of departure, I am satisfied that the above longitude is pretty well to be relied upon.

To the above useful observations, we annex the following

REMARKS ON THE HARBOUR OF SEVASTOPOL.

Mr. James Turton, who visited Sevastopol in November, 1829, as master of H.M.S. Blonde, alludes to this harbour as being one of the finest in the world. He observes, that a reef of rocks extend from both sides of the entrance, and that there is a sunken rock nearly in midchannel, on which a floating beacon, with a flag attached to it, has been placed. A similar beacon, with a flag, is also placed on the outer edge of the reef, on the starboard side, on a N.E. b. N. and S.W. b. S. bearing with the other, with a channel between them of 9 and 10 fathoms.

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* At the commencement of a gale from the N. W. this stern-fast should be slacked down, to allow the ship to come head to wind: it is soon over, and it should then be hove in again to keep the swell which comes from the N. right ahead.

A vessel going in must bring two light-houses on with each other, bearing E. b. N. and W. b. S., which will lead her into the outer harbour. The Blonde anchored in 9 fathoms on a ground of blue clay and mud, in an outside berth, with the following bearings:—The outer point on the starboard hand S. 85° W. The point leading to the inner harbour S. 45° E. The outer point on the larboard hand going in, (on which is a battery,) shut in with the second battery; the latter bearing N. 30° W. and the telegraph flag-staff North. The inner harbour extends to the S.W. about four or five miles, but is only navigable for line-of-battle ships for the first three or four miles. The quarantine harbour is in the second cove, on the starboard hand going in, where vessels lie sheltered from all winds. Provisions were cheap and plentiful.

In standing for the harbour, the Blonde had 30 fathoms, with the light-house on Cape Kherson, S.W. b. W., and the harbour E. S.E., distant about three miles. During the time that the Blonde remained, which was from the 13th to the 16th of November, it snowed constantly.

25.—Navigation of the St. Lawrence.

The masters of vessels trading to Quebec will do well to observe, that, on the south coast of Newfoundland, between the meridians of 55° and 56° west and the latitudes of 45° and 46° north, is a deep gulley, running in a N. N.E. and S. S.W. direction, and separating the bank of St. Peter's from the Green Bank, both of which are entirely independent of the great bank of Newfoundland. The method adopted by the French vessels bound to St. Peter's, for making that island, is as follows:

From the longitude of 52° W. in lat. 45° N. they steer a N.W. course, which carries them across the Green Bank in 48 fathoms water; and when on the meridian of 55° 10′ W. in about 45° 30′ N. they suddenly deepen their water from 45 to 90 fathoms. A further run on the same course of about 10 miles carries them across this gulley, when they shoal their water again to 35 and 30 fathoms; and after a further run of 23 miles, they steer about N. N.E. directly for the island, and seldom or never miss it.

Vessels that may have lost their reckonings, on finding this gulley, which may be known by the water shoaling on the east and west sides of it, an experiment that is frequently made for ascertaining whether they be actually in it or not, may safely take it as a fresh departure. Masters of vessels not being aware of it, when they have found the water deeper from the Green Bank to the westward, have imagined themselves entering the Gulf of St. Lawrence, and by steering a course too far to the northward have been lost to the eastward of Cape Ray, on the rocks of Newfoundland. The length of the gulley is about 60 miles in the direction we have given, and the meridian of it is in the latitude of 45° 30′ N. and long. 55° 25′ W.

The foregoing important information has been kindly furnished by Captain Sir Richard Grant, R.N., to whom it was recently supplied by the French commandant at the island of St. Peter's.

We subjoin a list of latitudes and longitudes of various points on the St. Lawrence, determined by Captain Bayfield, employed there surveying, and have added to it some others about the entrance of the Gulf, determined by the officers employed lately under the orders of Vice-Admiral Sir Charles Ogle, Bart., which our Quebec traders may depend on as being sufficiently accurate for all the purposes of navigation.

NORTH SHORE.	Lat. N. ° ′	Long. W. ° ′	Variat. W. ° ′
Cape Whittle, S.W. Island off........	50 11	60 10	
Kegashka River Entrance	50 12	61 19	
Mingan Settlement	50 18	64 5	
Point des Monts Light-house	49 20	67 26	20 0
St. Nicholas Harbour, West Point	49 18	67 50	19 44
Manicouagan Point, S.E. Extreme....	49 6	68 16	
Bersimis River, S.E. Point of Entrance	48 53	68 40	19 00
Jeremy Island, Hudson's Bay, Post ..	48 53	68 50	
Port Neuf. Church	48 37	69 9	17 15
Brandy Pots., S.E. Point............	47 52	69 44	17 15
River Saguenay, N.W. Store at Entrance	48 9	69 46	17 35
Isle Aux Coudres..................	47 25	70 11	15 30
Quebec, Bastion of Citadel	46 49	71 16	13 38
SOUTH SHORE.			
Gaspe, Ship Rock	48 45	64 12	21 16
Magdalen River	49 45	65 22	
Matane River, West Point	48 52	67 34	19 30
Little Metis reef	48 41	68 5	16 30
Bic Island, S.E. reef	48 25	68 51	17 16
Green Island Light-house	48 3	69 28	
Crow Island	47 35	69 56	16 15
ANTICOSTI ISLAND.			
East Point	49 8	61 43	25 19
North Point	49 57	64 12	
West Point	49 52	64 35	
South-West Point	49 24	63 38	23 0
South Point	49 4	62 18	23 45

The following have been determined by the officers employed under Vice-Admiral Sir Charles Ogle, Bart.:

GULF OF ST. LAWRENCE.	Lat. N. ° ′	Long. W. ° ′	Variat. W. ° ′
Magdalen Island, N.W. Bird Island ..	47 50	61 13	
Do. N.E. Point	47 38	61 26	22 23
Isle St. Paul	47 13	60 11	
Cape North, C. Breton Island	47 2	60 27	23 0
COAST OF NEWFOUNDLAND.			
Cape Race	46 40	53 8	
C. Chapeau Rouge	46 51	55 29	28 34
St. Peter's Island Light-house........	46 47	56 14	
Cape Ray	47 37	59 21	

26.—NEW LIGHT-VESSEL IN THE HUMBER.

"*Trinity-House, Kingston-upon-Hull*, 3*rd Jan*. 1833.

"Notice is hereby given, that, in conformity with the intention expressed in the advertisement from this House, of the 8th day of November last, a Floating Light-Vessel has been moored off the south-east end of the Bull Sand, in the River Humber; and the bright light on board the same was exhibited, from a single lantern, on the evening of the 1st instant, and will be continued every night from sun-set to sun-rise.

"This vessel is moored in four and a half fathoms at low water, spring ebbs; about one mile and a half from the Spurn Point, and about a quarter of a mile from the shoalest, or south-east, end of the Bull Sand, with the following compass bearings, viz. :—

Spurn High Light............	N.E. ½ E.
Buoy of the Bull Sand........	N. by W. ¾ W.

"The above vessel shews a Blue Flag during the daytime, and in hazy and dark weather a gong is sounded.

"By Order, "WM. BUNNEY, jun., Secretary."

27.—LIGHT-VESSEL ON THE TRINDELIN, BALTIC.

"*Elsinore, Feb*. 26.—The Trindelin light-vessel sailed hence this morning, for the purpose of resuming her station at the Trindelin Rock."

28.—CHANNEL BETWEEN FAYAL AND PICO, WESTERN ISLANDS.

"*Fayal, Nov*. 16, 1832.

"Sir—For the information of masters of vessels that may pass through the channel between this and Pico, or those requiring assistance from the shore, I beg to acquaint you, that I have erected a flag-staff behind the Castle of St. Cruz, and provided the telegraph flags of Captain Marryat, which will enable the former to communicate any information they wish to be reported, and the latter to obtain immediate assistance.

"I am, &c.,
"WM. LANE, Agent to Lloyd's.

"To John Bennett, Esq., Lloyd's."

29.—PROVISIONARY LIGHT OF THE HEAUX DE BREHAT, *Department of the Northern Coasts*. From the *Annales Maritimes*.

Navigators are hereby informed, that from the 1st of December, 1832, a small fixed light will be shewn every night on the top of a little watch-tower placed on the highest rocks of the *Heaux de Brehat*, distant 4½ geographical miles N. 39° W. (true) from Isle Brehat, department of the Northern Coasts.

This light will be seen in fine weather within a distance of 10½ geographical miles.

It is necessary to observe here, that the charts of the *Neptune Français*, as well as many others published in England, are very incorrect in the relative positions of the *Heaux de Brehat* and the rocks called *Roch-ar-Bel*, the *Horaine*, the *Roche-Gautier*, the *Barnouic*, and the *Roches-Douvres*. The positions of these rocks were correctly determined in 1830-31, by MM. the naval engineers; and an account of them, accompanied by a chart, has been published by M. Beautemps-Beaupre in the *Annales Maritimes*, in the commencement of the second part of the first volume for the year 1832.

(Seeing the importance of the paper alluded to above, which was so ably and clearly drawn up by M. Beaupre, we translated it entirely, and inserted it in the fifth nnmber of this work.—Ed.)

TIDE-TABLE FOR APRIL, 1833.

Mean Time.

Week Day	Month Day	PLYMOUTH *Dock Yard.*				PORTSMH. *Dock Yard.*				SHEERNESS *Dock Yard.*				LONDON *Bridge.*				ABERDEEN.				LEITH.				Month Day	D's Age at Noon.
		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.			
		h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.		
M.	1	2	31	3	8	8	53	9	25	10	15	10	46	11	23	....		10	49	11	17	....		0	24	1	11
Tu.	2	3	40	4	8	9	54	10	21	11	13	11	37	0	1	0	33	11	42	....		0	52	1	17	2	12
W.	3	4	32	4	54	10	43	11	3	12	0	....		1	2	1	25	0	5	0	26	1	40	2	1	3	13
Th.	4	5	16	5	37	11	23	11	44	0	22	0	43	1	49	2	14	0	47	1	8	2	22	2	43	4	Ful
F.	5	5	59	6	20	....		0	5	1	5	1	24	2	39	2	57	1	28	1	48	3	3	3	23	5	15
Sat.	6	6	37	6	56	0	26	0	45	1	41	2	1	3	17	3	35	2	7	2	25	3	42	4	0	6	16
S.	7	7	13	7	31	1	5	1	23	2	18	2	36	3	54	4	9	2	44	3	3	4	19	4	38	7	17
M.	8	7	48	8	6	1	42	2	1	2	54	3	15	4	26	4	41	3	21	3	40	4	56	5	15	8	18
Tu.	9	8	25	8	45	2	22	2	43	3	36	3	58	4	56	5	13	3	59	4	20	5	34	5	55	9	19
W.	10	9	6	9	26	3	7	3	30	4	18	4	40	5	31	5	48	4	42	5	6	6	17	6	41	10	20
Th.	11	9	50	10	14	3	53	4	20	5	3	5	27	6	8	6	32	5	32	6	2	7	7	7	37	11	21
F.	12	10	44	11	16	4	48	5	20	5	54	6	26	7	0	7	32	6	37	7	15	8	12	8	50	12	LQ
Sat.	13	11	54	....		5	55	6	33	6	58	7	36	8	12	8	55	7	57	8	38	9	32	10	13	13	23
S.	14	0	38	1	14	7	10	7	42	8	12	8	50	9	39	10	27	9	16	9	51	10	51	11	26	14	24
M.	15	1	48	2	18	8	13	8	42	9	24	9	54	11	8	11	48	10	20	10	47	11	55	....		15	25
Tu.	16	2	47	3	15	9	8	9	32	10	22	10	46	....		0	16	11	9	11	30	0	22	0	44	16	26
W.	17	3	40	4	2	9	54	10	14	11	8	11	27	0	39	0	59	11	48	....		1	5	1	23	17	27
Th.	18	4	22	4	41	10	33	10	51	11	45	....		1	21	1	42	0	7	0	24	1	42	1	59	18	28
F.	19	4	58	5	16	11	7	11	24	0	4	0	23	1	56	2	10	0	39	0	54	2	14	2	29	19	29
Sat.	20	5	35	5	55	11	42	....		0	42	1	1	2	24	2	40	1	11	1	27	2	46	3	2	20	N M
S.	21	6	14	6	32	0	1	0	20	1	19	1	36	2	55	3	9	1	42	2	0	3	17	3	35	21	1·4
M.	22	6	49	7	7	0	39	0	58	1	54	2	12	3	24	3	40	2	18	2	37	3	53	4	12	22	2·4
Tu.	23	7	26	7	44	1	17	1	37	2	31	2	50	3	57	4	12	2	56	3	18	4	31	4	53	23	3·4
W.	24	8	3	8	25	1	56	2	19	3	12	3	35	4	29	4	46	3	40	4	3	5	15	5	38	24	4·4
Th.	25	8	46	9	10	2	43	3	9	3	59	4	23	5	8	5	31	4	29	4	56	6	4	6	31	25	5·4
F.	26	9	35	10	3	3	35	4	3	4	49	5	16	5	55	6	22	5	25	5	58	7	0	7	33	26	6·4
Sat.	27	10	35	11	14	4	35	5	11	5	46	6	21	6	52	7	29	6	35	7	16	8	10	8	51	27	FQ
Su.	28	11	58	....		5	53	6	34	7	1	7	44	8	14	9	3	7	59	8	42	9	34	10	17	28	8·4
M.	29	0	46	1	28	7	17	7	54	8	27	9	13	9	52	10	41	9	22	9	58	10	57	11	33	29	9·4
Tu.	30	2	7	2	42	8	31	9	3	9	49	10	22	11	20	11	52	10	28	10	56	....		0	3	30	10·4

The times of high-water, nearly, at other places on the coast, may be found with the assistance of the above table within certain limits. Thus, the times in the Plymouth-Dock column are to be used for all places between the Land's End and Lyme Cob; and those in the Portsmouth column, for all places between Portland Bill and Beachy Head; by adding or subtracting the time opposite each place, according to the sign + or —.

The times of high-water at Plymouth Dock-Yard are to be used with the difference against the following places, to find the time of high-water there on the same day:—

	h. m.		h. m.
Mounts Bay and Lizard	— 1 3	Eddystone	— 0 18
Falmouth Harbour	— 0 18	Dartmouth and Torbay	+ 0 27
Fowey Harbour	— 0 18	Exmouth	+ 0 52
Cawsand Bay	— 0 10	Lyme Cob	+ 0 27

The times of high-water at Portsmouth Dock-Yard are to be used as above, for the following places:—

	h. m.		h. m.
Portland Bill	— 6 10	Cowes	— 0 55
Weymouth Harbour	— 5 10	Southampton	— 1 0
Christchurch and Poole Harbours	— 2 50	Bembridge Point	— 0 40
Needles Point	— 1 55	Selsea and Arundel Harbours	+ 0 5
Hurst Chamber	— 1 40	Shoreham Harbour	— 0 25
Lymington	— 1 25	Beachy Head	— 1 25

VOYAGES AND MARITIME PAPERS.

On Submarine Navigation.

"Est in Carpathio Neptuni gurgite vates!
Cœruleus Proteus, magnum qui piscibus æquor
Et juncto bipedum curru metetur equorum."
Virgil. Georgic IV.

"In the Carpathian bottom makes abode
The shepherd of the seas, a prophet and a god!
High o'er the main in watery pomp he rides;
His azure car and finny coursers guides:—
Proteus his name." *Dryden.*

During the middle ages, and even in times of the most remote antiquity, divers were employed to bring up articles of value from the bottom of the sea; to cut the cables of enemies' ships; to stave in their bottoms; and also to carry despatches, money, and even amunition, into besieged places.

The invention of diving-machines is thus of very ancient date. Aristotle mentions the bagpipe and diving-bell as two things very common in his day. Several writers of the thirteenth century have advanced, that Alexander the Great had sailed in a kind of submarine vessel; but whether this be fact or not, it is at least certain that diving-machines were in use as early as the thirteenth century. About the end of the sixteenth century, the inhabitants of the Ukraine made use of large canoes, in which they dived beneath the surface of the water, in order to escape from the pursuit of the galleys belonging to the Grand Seignor; and about the same period, several authors published descriptions of submarine vessels. The learned father Marsenne, however, was the first who wrote at any length on the subject, and who conceived the idea of employing them in destroying the fleets of an enemy. This author observes, that, besides the advantages and uses yet unknown, that would result from the practice of this new art, submarine vessels would favour the recovery of sunken treasure, the pearl and coral fisheries, and an infinity of experiments and scientific researches.

Marsenne's work appeared in 1664; about twenty years previous to which, Cornelius Van Drebbel, a native of Alkmaër, had constructed in London a submarine boat, which contained twelve rowers, besides passengers. James the First was of the latter number on one occasion, and descended beneath the surface of the Thames. Van Drebbel, it was said, had further discovered a liquid having the property of imparting to the air the principles requisite for respiration, and thus to enable a man to remain a considerable time under water. *If this were really the case*, Van Drebbel is still more remarkable as a chemist than as an engineer.

In 1653, a Frenchman exhibited at Amsterdam another submarine vessel, seventy-two feet long. He would not divulge the secret of manœuvring it, but attributed to it the power of destroying the most numerous squadrons, and of performing the longest passages with extraordinary rapidity.

David Bushnell, a native of Connecticut, constructed, in 1726, a small boat, with which he tried, by means of a petard or torpedo, to blow up a British cruiser; but the experiment failed, owing to the *mal-adresse* of the man charged with the enterprise. The boat worked with the greatest facility under water. It was sunk by means of water admitted into a reservoir constructed for the purpose in the hold, and was easily raised again by pumping out the fluid. An oar, constructed something like the screw of Archimedes, and placed horizontally under the bottom, propelled it backwards or forwards. Another similar one, placed vertically upon the upper part, regulated the depth of the immersions, independently of the quantity of water admitted into the reservoir.

Fulton tried a boat of the same kind at Havre and Brest, in 1801. This boat was called the Nautilus. It contained four men, and had masts and sails, which were lowered upon deck when the boat went below the surface of the water. A copper globe, containing condensed air, served to renew the internal atmosphere. Fulton fixed a petard to the bottom of several old ships, and blew them up. In 1809, Messrs. Coessin tried at Havre, by order of Napoleon, a small vessel, also named the Nautilus. The crew was composed of nine men, and she was intended, during the night, to go out and fix combustibles on the enemy's ships. The committee appointed by the National Institute expressed themselves thus on the subject of this vessel:—"There is no longer any doubt of the *possibility* of establishing submarine navigation, and at a trifling expense."

When death arrested the mortal career of Fulton, he was occupied with the construction of a new ship, which he called the Mute. This vessel was intended only to sink beneath the immediate surface of the water. A man whose head just appeared above the deck was to direct her course. She was to advance in silence during the night under the keels of the ships at anchor, and to have sunk them, by means of a submarine columbiade, or torpedo, a short gun that discharges a ball of 100 lbs. weight. The velocity of this boat would scarcely have exceeded five miles an hour, although 100 men worked the wheel by which she was to be propelled.

An officer of our own navy, has more recently constructed a boat with which he descended more than thirty feet below the surface of the water. But by far the most extraordinary and largest vessel of the kind was that with which the celebrated smuggler Johnson proposed to carry off Napoleon from St. Helena. This vessel was *one hundred* feet long, and the masts and sails were so constructed as to be lowered on deck. Johnson proposed to make the island about nightfall, in order to avoid the government cruisers, and to approach the shore under water, and then despatch an embassy to Napoleon, to concert means of escape.

Immense sums were promised to him, in the event of success; independent of which, it was stipulated that he should receive £40,000 on the day his vessel was ready to proceed to sea. But, on the very day that they were coppering her, they received the news that the celebrated captive no longer existed. Captain Johnson had already given proofs of the most daring and deliberate courage. He had repeated, at the direction of the Admiralty, the experiments of Bushnell and of Fulton, which consisted in fixing to the keel of a vessel at anchor a kind of "petard," the explosion of which was effected by means of clock-work and a loaded pistol. On one occasion, the anchor of the petard-vessel got foul of the ship's cable used for the experiment, and, after having fixed the petard, Johnson strove in vain to get it clear. He then looked quietly at his watch, and said to the man who accompanied him, "We have but two minutes and a half to live, unless we can get clear of the cable." This man, who had been married only a few days, began to lament his fate, and to call upon the name of his wife in terms of the bitterest anguish — "Poor Nancy, poor Nancy," sobbed the poor fellow. "Cease your lamentations," said Johnson sternly to him, "they will avail you nought. Take off your jacket, and stop up the hawse-hole." And, seizing a hatchet, he cut the cable, and got clear off; when immediately the petard exploded, and blew up the vessel.

At a subsequent period, Johnson navigated under the surface of the Thames, in a vessel in which several persons remained for eight or ten hours, without finding the necessity of introducing external air. This vessel was intended for the destruction of the French fleet, then blockading Cadiz. The Spanish committee, after having favourably rewarded the projects, made an offer to the Cortes to execute it at their own expense; but the dissolution of that body put a stop to the enterprise.

Submarine vessels are the surest, but not the only means of destroying, with almost magical facility, the largest ship afloat. We have already said, that divers were formerly employed in cutting the cables, or for staving in the bottoms of ships. They were also employed in the thirteenth and fourteenth centuries to burn fire-ships, and in hydraulic works.

Frederic Zambelli constructed for the inhabitants of Antwerp, in 1585, his celebrated things called infernal machines. Abandoned to the current of the Scheldt, they destroyed a bridge formed by a number of vessels. In 1607, Crescentio described a kind of *fouyade*, intended to blow up ships attempting to force the entrance of a harbour. In 1720, Doctor Desaguliers blew up on the Thames some large vessels, by means of water-rockets. We shall pass over several other experiments less worthy of remark; but there are others that must not be forgotten.

In 1777, David Bushnell blew up, with a petard, in the Delaware, a small English cruiser. In 1804 we employed some catamarans against the flotilla at Boulogne: they contained from three to four hundred pounds of powder; but the damage they did to the enemy was inconsiderable.

Fulton, whom Buonaparte had always treated with contempt, offered at this period his services to the British government. He blew up, in the roadstead of Walmer, an old Danish brig, furnished for the occasion. The submarine petards, to which he gave the name of torpedoes, contained 180 lbs. of powder. Four of them were also tried at Boulogne, but they did not succeed. In 1807 Fulton repeated his experiments with success, at New York; and about the end of the year 1814, he fired under water several guns of different calibre. The invention of Father Marsennes, revived at a later period by an English bishop and a French officer, had never been carried into execution. A submarine colombiade perforated, at the distance of 12 or 15 feet, a plank the thickness of a ship's bottom. The cessation of hostilities between the two countries prevented the Americans from making use of these projectiles.

During this war, there were cast at the foundry of General Mason, in the district of Colombia, a kind of carronade, which carried a ball of 100 lbs. These guns received the name of *Colombiades*, for the same reason that the carronades cast in the celebrated foundry of Carron, in *Scotland*, received their name.

The following method was adopted for firing these machines under water, by Fulton: In one or several parts of a vessel's hold, a platform against her side was erected, and upon this platform a grooved gun-carriage was placed, the only movement of which was perpendicular to the sides of the vessel. Upon this a columbiade was fitted, facing a port-hole shaped exactly to its size, and closed by a plug, to prevent the water from rushing in. Now, supposing the colombiade sufficiently removed from the port-hole to be loaded conveniently, the wad being well greased and rammed home; the piece being primed, was run out through the port-hole, which, as observed, it exactly fitted, and, when within 10 or 15 feet of the enemy's vessel, was discharged. The plug was also fitted in such a manner, that, on the recoil of the gun, it immediately filled its place, so that a very small quantity of water only could rush into the vessel. Fulton recommended strongly the American government to adopt this new artillery.

We have in the course of this paper alluded to the Mute of Fulton—a vessel intended to be sunk even with the surface of the water, and which, of course, could only be intended to surprise an enemy by night. But Montgery, a French naval officer, has recently discovered that it is possible to direct the course of a vessel sunk entirely beneath the surface of the water. We shall subjoin, in his own words, the description of the "invisible ship," as he styles this invention.

"I term it *invisible*," he says, "because it would be possible to render it so, when required by circumstances; but at other times it would be worked exactly as other vessels, by means of machinery or sails. Its velocity would surpass even that of steamboats: the last model that I produced was 86 feet long, 23 wide, and 14 in depth. Generally speaking, iron is better adapted than wood for the construction of submarine vessels, because it is more impenetrable, and likewise, with an equal volume, gives a greater interior space. The upper part of the model is almost like her bottom, but rather flatter, in order to facilitate the manœuvres when below the surface of the water. It has two hatchways, and several patent lights, for the purpose of giving light between decks. It carries two small masts, with lateen sails; and forward, a bowsprit, foremast, and topmast, on which are set a jib, foresail, topsail, and four small sails. The bowsprit slides into the vessel, and the masts are upon hinges; so that when the vessel submerges, all her spars and rigging are stowed away unseen on the middle of her deck. The vessel has one deck: the hold is divided into compartments for the ammunition, and others destined to receive the water necessary to sink the vessel. The water is let in by means of cocks, and as certain compartments become filled, the vessel gradually sinks. When she is sufficiently hidden under the water, which is ascertained by means of an instrument for the purpose, the ingress of the water is stopped. Again, when it is wished to raise her, the water is pumped out."

A Mr. Martenot invented in 1703 a kind of oar, which bears his name, and which, if slightly improved, would be admirably adapted to submarine vessels. It consists of a prism suspended vertically on the sternpost of the vessel: the side of the prism next to the sternpost is cylindrical, the opposite side is terminated by two planes forming an obtuse angle. Each plane repels the fluid alternately, and by the reaction propels the vessel, which is besides furnished with two rudders on each side the stern. All vessels that navigate below the surface of the water have a tendency to rise and sink alternately, though their specific gravity may remain unaltered. A third rudder placed above the martenote, and turning round a horizontal axis, will correct this tendency; not that this rudder is indispensable, for by means of the quantity of water admitted into the two compartments at the extremities of the hold, the head or stern of the ship may be raised or lowered at pleasure. The martenote cannot, however, give the ship either a rotatory or a retrograde movement; but three oars on each side the vessel are made to perform this easily. Her complement of men, including officers, is 96. Four colombiades, a machine for throwing combustibles, 100 water-rockets, and as many torpedoes, compose the offensive means of the "invisible." Two iron tubes, ball-proof, are placed vertically in the deck, extending about a couple of feet above it. These are covered with a water-proof covering, and are moved by a jack. Their upper part is terminated by a spherical cap, pierced with four holes of an inch square; these holes are closed by four bungs, which open with a spring so soon as they are not exposed to the pressure of the water. These four holes are the orifices of four conductors belonging to a ventilator; two conductors serve to renew the atmospheric air, and the two others to draw off the foul air. Six inches lower down there are four other holes, furnished with glasses, contrived so that a man placed at each tube may, through them, observe the horizon, although the vessel be under water. These tubes, one of which is placed in the fore, and the other in the after part of the vessel, should only be elevated above the water during the time requisite to ascertain the enemy's position.

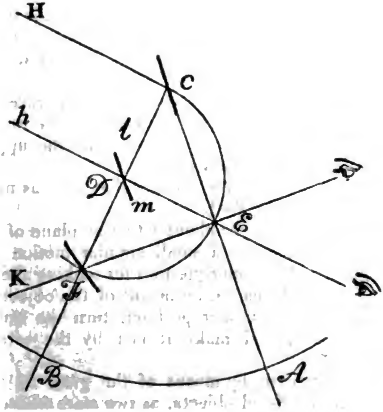
Besides the property which these tubes have of directing the vessel's course, they have that of renewing the atmospheric air. By means of them it is possible to remain below the surface of the water for an indefinite period; and should these two tubes at any time become unserviceable, the crew would *avail themselves of the air condensed in reservoirs formed for that purpose in the hold of the vessel, capable of sufficing for the respiration of the crew during fifteen or sixteen hours;* and at the approach of night the vessel ascends to the surface. A ship of this description is then really invisible as long as her safety requires it; and certainly no vessel at present on the ocean possesses the means of coming up with, and attacking her, with any prospect of success."

Such is the description of the invisible submarine ship invented by Monsieur de Montgery, "Capitaine de Vaisseau in the French navy." Many of our readers (and, we admit, with justice) might question the possibility of practically illustrating the labours of Montgery. Without offering any opinion of our own on a question that time alone can solve, we will only remark, that many of the discoveries and inventions that in our day elicit the admiration of mankind, are of very ancient origin. But it has required the lapse of ages to enable them to overcome the prejudice of custom. Such has been the fate of every invention, from the simple plough to the complicated steam-engine. In every age, arts and sciences bore their conventional limits: to extend these limits, requires the most prodigious efforts of genius, and a combination of favourable circumstances. These rarely occur. The first essays are generally unsuccessful. But, proceeding from trial to trial, and after having absorbed the leisure and the fortunes of many enterprising men, these inventions, erroneously called new, are finally matured with complete success.

In the Marquis of Worcester's Century of Inventions we find a very curious description of a submarine vessel. And, notwithstanding that this work has lately been pronounced a ridiculous compound of lies, chimeras, and impossibilities, men of scientific knowledge now look upon it with far different sentiments; for it is unquestionably a work from which much useful information may be derived. Such, as we said before, is the prejudice of custom, that the dawn of every new invention is marked by the clamours of ignorance and prejudice. When Franklin was asked what benefit would accrue to the world from the invention of aerostatics, he is said to have replied—"Of what use is the new-born child? he may die in the cradle; but, on the other hand, he may live to be the honour and glory of his country." The moral of the philosopher's answer may teach us the folly of unreasonably opposing any project before it has had time and opportunity of fully developing itself.

II.—Description of a Sextant, *the power of which is increased by means of an additional* Horizon Glass.

Let CAB in the figure represent a common quadrant having the angle ACB equal to 45 degrees: let C be the index-glass; CA the zero-line, or the plane of the glass produced; D the horizon-glass; and E the sight-vane.



Suppose C and D to be parallel, and that a ray coming from an object, H, is reflected from C, along the line CD, and from D along the line DE to the eye.

A ray of light from h may be supposed to come from H, if the two, H h, are more than half a mile from the instrument, and the object H will be seen directly, and by reflection, in the line DE.

The angle DCE being equal to the angle l DC, or m DE, or DEC; DC is equal to DE. On the centre D describe the circle CEF. Place a glass at F, similar to that at D, but making an angle with CB, which will reflect a ray passing along CF, in the line FE, at E. CFE is an angle at the circumference of a circle, and therefore half CDE, at the centre equal to DEF, or forty-five degrees.

Now, by the construction, a ray from H will be reflected from F along the line FE, and will appear in contact with an object at K, which we will suppose to be the horizon of the sea.

Thus, by looking through the glass F, and bringing an object into contact with the horizon, which is really forty-five degrees above it, the index of the quadrant will be at zero; and by looking through F, and bringing an object into contact with K, or the horizon, which is really one hundred and thirty-five degrees from it, the index of the quadrant will be at ninety degrees.

Figure 4 in the plate, represents the form of the instrument.

A—the horizon glass to which the telescope is directed when the angle to be measured does not exceed 120 degrees.

B—the additional glass to be used when the angle is included between 40 and 160 degrees.

C—the frame into which the telescope screws, is made to turn into the proper direction for observing with either glass, having first removed a small spring which holds it in a fixed position, by means of a milled nut at D.

The divided arch has two rows of figures engraved, the lower numbers, from 0 to 120, by which the divisions are to be read off, when an observation is made with the glass A; the upper from 40 to 160, to be used with the glass B.

The adjustment of the glass A being the same as in other sextants, needs not to be described.

To adjust the glass B perpendicular to the plane of the instrument, the horizon frame has a small circular motion by which it may be brought into the proper position for making the contact of the direct and reflected images, by means of the object glass. To adjust it for the proper angular position, turn the horizon frame into its proper place, and make it fast by the screw for that purpose.

Then having measured, by means of the glass A, the angular distance of two well-defined objects, as two stars whose distance is not less than 40 degrees, suppose the angle found to be equal to 45° 20′ 30″, as shewn by the lower circle of figures.

Then set the vernier to 45° 20′ 30″ by the upper figures, and pointing the telescope to the glass B, the coincidence of the images is obtained, by means of the adjusting screw behind the glass.

III.—NEUTRALS AND SHARKS.

A Tale of the West Indies.

[The following is the substance of a letter from Lieut. M. Fitton, R.N., to Ilted Nicholl, Esq., His Majesty's proctor at Jamaica, and the circumstance which it relates is one of those extraordinary coincidences that are almost past belief. We have taken it from a copy of the original, to which we have adhered as closely as possible, and are assured by Lieut. Fitton that the shark's jaw is now the possession of that gentleman in London.]

THE commander-in-chief on the Jamaica station, in 1799, ordered Lieut. Whylie, in the Sparrow cutter, to cruise in the Mona Passage with the tender of His Majesty's ship, Abergavenny, under my command.

We dined together off the east end of Jamaica, and, on comparing notes, we found that he had ten guns in the Sparrow, and I had six three-pounders in the tender; with which it was agreed, (after we had dined,) that we certainly could capture any sloop of war belonging to the enemy, and (before we parted) that we could even beat off, and tolerably well hamper, a frigate.

We parted the next night in chase, but joined company again some days after, off Jaquemel, on the south side of St. Domingo. At daylight, the Sparrow was about six miles in-shore; and I asked Lieut. Whylie, by signal, to come on board to breakfast.

Whilst his boat was on her way, I seated myself on the tafrail watching her progress. The morning was cool and serene, the sea calm and transparent. The far-distant rock of Altavela was seen on the disk of the rising sun, as he appeared above the horizon; an extended line of diversified coast, with Isle la Vache to leeward; the stupendous mountains of Grand Ance, clothed in forests of eternal green, studded with white coffee plantations, their base concealed by a floating vapour, mingled their lofty summits with the ethereal blue of heaven! There was something so inspiring in the whole scene, added to the cool freshness of the morning, and the stillness of all around, that it was worth going five thousand miles to witness, at the risk of dying of the yellow fever, the lot of many a good fellow that I have known.

As I was thus seated on the stern, I observed at some distance from the vessel a dead bullock floating on the surface of the water, and some sharks busily tearing it to pieces. This did not excite my surprise, as I was then in the track of cattle-loaded vessels from Puerto Cavello and Laguayra; but I ordered it to be towed alongside, which was soon done, the sharks following it. Among the sharks there was one much larger than the others, which I resolved to catch, and make a walking-stick of his back-bone, by inserting a wire through it, as I had seen frequently done.

I baited the hook with a four-pound piece of beef; but John-shark rubbed himself against it several times, and did not seem quite to fancy it, although the others would have taken it, if I had not drawn it from them. Seeing that this huge fellow was rather dainty, I changed the bait for a piece of pork, which, after slighting for some time, he at last bolted. With a strong effort, I fixed the hook in his jaws; as a matter of course, in his turn he sprung forward, but, after playing him a little with about sixty fathoms of line, I had him hoisted on board.

The process of dissecting him was soon commenced; and being curious to know what he had got in his stomach, it was quickly opened, when, to our astonishment, out came a large *bundle of papers tied up with a string.*

The sailor who had been the principal character on the occasion, like most others, loved a joke; and, as he presented the bundle to me, said, with a smile, A packet, sir, by ——— ! I hope it's from England: please your honour, (touching his hat,) will you look if there's ere a letter for me; I should like to hear from my old blowing!!

The papers, excepting the envelope, were in a perfect state; they related to a vessel's cargo; and a letter, dated at the island of Curaçoa, had this commencement, "My good friend, Mr. Christopher Schultz, of Baltimore, supercargo of the American brig Nancy, will hand you this." Mercantile affairs then followed.

My first idea was, that the shark had come from the island of Curaçoa; the next was, that the papers had been thrown overboard from some vessel chased by one of His Majesty's cruisers.

I therefore hailed the man at the masthead, and told him to keep a good look out; as, no doubt, there was a vessel not far off. "There's nothing in sight, sir," he answered, "but the Sparrow cutter in-shore, and her boat pulling on board." Well; keep a bright look out, my boy, I said; and remember the bottle of rum, and the dollar, and a day's leave on shore; for I always liked to reward my men for every strange sail that turned out to be an enemy: and in case of gross neglect, which seldom happened, I gave them something else. And yet my men were much attached to me, from the thorough conviction that I would serve out my own brother in the same way; never making (as they said) fish of one and flesh of another, and never seeing a fault until I had broken my shins over it.

Lieut. Whylie shortly after this arrived on board. He was one of the old school, a perfect seaman, who had (like myself) waddled to the water as soon as he was out of his shell; and yet he had no affinity, more than oil, for that element—*water* being what he never took in. He was brave, of course, and had a strong regard for the enemy, and loved to lie close—" Yard arm and yard arm," was his maxim. He had completed his education from books scattered on the rudder-head, to him equally authentic and erudite, such as Homer's Iliad, Hudibras, Pilgrim's Progress, &c. In religion, he thought a short prayer *well said*, better than a life monastic; and, like most Christians of that day, abhorred popery and the pope, although he would have jumped overboard any day to save him from drowning. In speech, Lieut. Whylie was short and emphatic; but if a word of learned length came athwart him, either end seemed indifferent, and he had a knack of adding a syllable to those already sufficiently long. The West Indies suited him exactly, it being " a brae country, where ye are aye drinking, and aye dry." Alas, poor Whylie, he has taken his final launch; many's the cruise we have had together; he was a merry good hearted fellow, " take him all in all."

When Lieut. Whylie arrived on board, the following dialogue ensued between us.

Whylie.—What a devil of a long pull you have given me this morning, and not a breath of air out of the heavens; come, is breakfast ready?

Fitton.—Well, Whylie, my boy, what luck have you had since we parted co.?

Whylie.—Luck! Why, I have taken a Dutch schooner, and a French schooner, and have detained an American brig. (Looking round, and seeing the shark:) But why do you dirty your decks with those cursed animals? You'll be a boy all your life-time—Fitton.

Fitton.—Tell me, Whylie, was your American brig named Nancy?

Whylie.—Yes, she was; you have met her, I suppose.

Fitton.—No, I have not; I never saw her.

Whylie.—Then, how did you know the brig I had detained was named Nancy?

Fitton.—Was there a supercargo on board, called Christopher Schultz, of Baltimore?

Whylie.—Yes, there was, his name was Schultz or Skoolts, or some d—— Dutch name or other; why, you must have spoken her?

Fitton.—No, I have not; I never saw her.

Whylie.—Then, how the devil came you to know I had detained an American brig called Nancy, Christopher Schultz's supercargo?

Fitton.—The shark you see lying there, my boy, has brought me full information about the Nancy, and those papers you see spread out to dry are her papers.

Whylie.—That won't do, Fitton, for I sealed all her papers up, and gave them in charge of the prize master, when I sent the vessel away.

Fitton.—The papers delivered to you by the master, when you overhauled him, you have of course sent away with the vessel, but her true papers, which prove the owners to be enemies, and not Americans, are those which you see drying on deck, brought to me by that shark you abuse me for catching.

Lieut. Whylie stared at me—at the shark—at the papers—then quickly descended the cabin ladder, calling out "Breakfast ho—breakfast—none of your tricks upon travellers, none of your stuff, Fitton."

I soon after parted company, and I am not sure that Lieut. Whylie fully comprehended the circumstance until he returned into port, and found the vessel and cargo condemned to him as prize, by the recovery of the true papers; leaving to Jonathan no resource in future, but to swallow the papers himself.

Having preserved the shark's jaws, I sent it to the Admiralty Court of Jamaica, and wrote upon it, "Lieut. Fitton's compliments, and begs to recommend this jaw as a *collar* for the neutrals to swear through."

In addition to the foregoing, Lieut. Fitton remarks, that the same papers led to the condemnation of another vessel, that was taken into Port Royal by one of our cruisers. We believe that her name was Christophe. It happened that Lieut. Fitton dined at a *Table d'Hote* at Kingston, afterwards in company with the master and supercargo of the Nancy, who were making loud complaints of the brass-bottomed sarpents, the tyrants of the sea, that would not allow vessels under a neutral flag to follow their legal occupations. The contents of the shark's stomach, however, had proved them to be otherwise; and it was not until Lieut. Fitton had left the table, that they learnt the fact of their vessel's true papers having been thus found. It was communicated to them by the captain of a Danish vessel, named the Ameland; and on hearing it, they immediately took horses, and crossed the Blue mountains to Port Antonio, from whence they departed, leaving the Nancy and her cargo to their fate.

IV.—Steam Navigation.

To the Editor of the Nautical Magazine.

That the science of naval warfare, by the introduction of steam-vessels, will undergo a complete change, no one in the least degree conversant with the advantages arising from the extraordinary power of the steam-engine can reasonably doubt.

One of the first objects of the present administration has been the adoption of these vessels in the Royal Navy, and the efficiency of the measure is proved beyond the chances of probability. Although they have been employed in private speculations on our coasts for some years, a grant from parliament for the improvement of steam-navigation has only been obtained during the present administration. Steam-navigation is, however, yet in its infancy, and various experiments have been undertaken, and are continually going forward, with a view to the improvement of the vessel as well as of the engine, paddle-wheels, &c. The great obstacle to the former, as well as to the improvement of our mercantile marine in general, is the existing condition of the tonnage laws. The English method of determining a vessel's tonnage is well known to be fraught with error, and the law is evaded by every artificial means. In order to do this, some builders have given double, or artificial sides, to their vessel; but these, independent of the cost of material and labour, are highly prejudicial to their stability; besides greatly circumscribing the internal dimensions of the vessel. And, if the liability to dry-rot in steam-vessels be considered, which is produced from the various degrees of temperature occasioned by the heat of the boilers, bilge water impregnated with oil and tallow, at all times highly offensive, the system must be pronounced bad. Indeed, all vessels built on this plan, that come within our knowledge, from being affected with this disease, have cost the owners more than would have built a new vessel. About ten years ago, a steam-vessel of my own was built on this plan, with the view of circumscribing her dimensions within the least possible form, purely with the object of evading the tonnage laws. The result was, that, in four years afterwards, the dry-rot had gained to such an alarming extent in her, as to render it absolutely necessary to give her repairs to the extent of £4,000.

With regard to Government steamers, the services of which are so widely different from those employed conveying passengers and goods, an alteration on the present system of employing the propelling power appears advisable. All Government steamers intended as vessels of war, with a propelling power exceeding 140 horse-power, should have three instead of two engines. That my reasons for recommending this measure may be clearly understood, it may be observed, that the material of an engine above 80 horse-power, such as piston-rods, side-rods, cylinder, lever, side-beams, gudgeons, &c., which are all liable to casualties, then become so ponderous and unwieldy, that, in the event of accidents, even supposing duplicates to be on board, much time will necessarily be lost before the least damage can be repaired. And we might even go further, in supposing, no uncommon thing in sea-going vessels, that one engine be altogether disabled. When such an accident happens in a vessel having only two engines, she is rendered almost useless: but were the same thing to take place in a steamer having three engines, the loss of the third would scarcely be felt. During war, all our coasting convoys will unquestionably be conducted by steam, and these vessels will be employed blockading the enemy's ports, and attending on fleets. Now, when employed on such services, it is very evident that the whole power of the steam will seldom be required; consequently two engines will do more work than probably will be wanted. A steam-vessel running before a gale, and a high sea, requires no ordinary care and attention in the management of the engines; and under such circumstances, probably one-third of the steam generated is quite sufficient to drive them, for, were more at the time admitted into the cylinders, the risk of dashing the engines into a thousand pieces would be incurred. The economy of fuel also, as being an object in steamers of the first consideration, ought always to be borne in mind, and at all times strongly impressed on the attention of officers in command, for without this article the vessel becomes worse than useless.

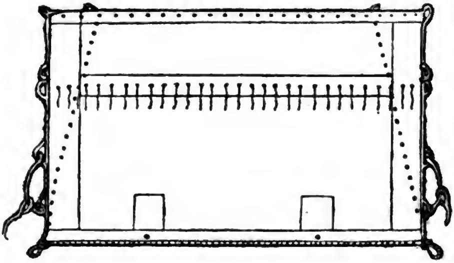
A steam-vessel having three engines on board, and eight fire-places, or furnaces, in her boilers, could, under the above-mentioned circumstances, easily extinguish two fires, and uncouple one engine; by doing which the saving of fuel would be immense. A steamer having only two engines can never do this. It may be objected, that the space occupied by three engines would be so great as to render the adoption of this suggestion unavailable; but we are quite prepared to maintain, that three engines of 70 horse-power each will stand in a much less space than two engines of 100 horse-power each can do.

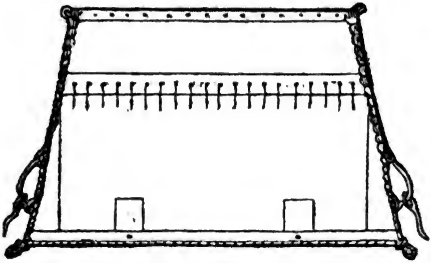
The power of driving one wheel forward and the other backward at the same time, is the first among the desiderata in the management of steam-vessels. W.

V.—SHIPS' SAILS.

To the Editor of the Nautical Magazine.

SIR—I intimated to you, in a letter I had the honour of lately addressing to you, several inventions I have had recourse to in the course of my nautical experience. I now beg leave to enclose a drawing of a very easy and ready method of converting a Foresail into a Topsail without cutting or injuring it.





During the very bad weather that happened in November, 1828, I left Quebec in command of the brig Tom, bound to Glasgow, in company with fourteen sail, six only of which, beside myself, arrived safe; the Granicus, George Canning, and others, being unfortunately lost on the island of Anticosti. I had experienced several heavy gales when about ten miles to windward of Cape Ray, carrying close-reefed topsails, and reefed foresail, to enable me to weather round the Cape. Most unfortunately, in a squall, I lost my fore-topsail; and having none other to replace it, I was certain of being driven on shore, which, without doubt, would have occurred, but for the contrivance of making my spare foresail into a topsail; there was no time for cutting or altering it, but I thought I could manage by reefing it in the leech. I had the sail hauled out into the cabin, and lined off from nothing at the clew, each side up, to as many cloths as were required to be taken in at the head, to reduce it to the size of my topsail; I then marked out small eyelet-holes, about eighteen inches apart, large enough to take two turns of marline. I set as many hands as could work in making them, and in about an hour and a half, I had the satisfaction of seeing a good topsail over my head. Had it not been for this experiment, we must certainly have driven on shore, as we weathered the Cape only by about two miles.

I have the honour to be, Sir, &c.,
HENRY GEORGE PEARCE.

The above may be new to some of our naval readers. The other ingenious inventions of Mr. Pearce shall appear shortly.

VI.—A DESCRIPTION *of the Manner in which* HIS MAJESTY'S SHIP ISABELLA *was fitted for a Voyage of Discovery to the* ARCTIC SEAS.

ANY thing that will contribute to illustrate the record of an event belonging to history must be considered as acceptable to the historian, more particularly when that event has passed by without the probability of a similar one taking place in our day. In this light we regard the late Arctic voyages, forming, as they do, one of the most important features in the geography of our northern hemisphere, and one no less remarkable in the annals of British skill and enterprise. We are therefore induced to lay before our readers a plan and section of the Isabella, the ship commanded by Captain Ross, on his first expedition, when, unhappily for himself, although too easily satisfied of the contrary, he pointed out the very course which led to the discoveries of his more fortunate successor, Sir Edward Parry. In the narrative of Captain Ross's voyage, some account is given of the method adopted in fitting out the ships for this service, but as it is accompanied by no plan, shewing the various additional timbers that were introduced in the fabric of the ships, it is necessarily imperfect. We shall, however, avail ourselves of it, in order to render our own a complete record of the various preparations which the Arctic ships underwent for their several voyages in the 19th century.

Externally.

One strake of plank was taken out from the bottom, all fore and aft, at the heads and heels of the timbers composing her frame, to ascertain the condition of the ship; in lieu of which, a strake of oak, seven inches thick, was introduced, with a rabbet on each edge, to make good the substance, and receive the doubling of the bottom, which was of oak three inches thick; the original bottom was then well examined, caulked, and payed with the common mixture of pitch and tar; after which, a coat of felt (a composition of animal hair and tar, in its properties both elastic and adhesive) was laid all over the whole surface, on which the doubling oak plank was brought, and secured through the original plank timbers, and inside lining of the ship, with bolts well clenched: this doubling extended up the counter abaft, as well as to the after part of the stern-post, in which a fresh rabbet was formed, abaft the original one, within about four inches of the back, to receive the ends, or butts, of the said doubling. The bows were still more strongly and substantially fortified, prior to the doubling being brought on; pieces of timber were worked vertically next the stem, in the angle formed by that and the bow, to sharpen the form of the vessel; underneath these pieces, a coat of felt was first laid, the pieces well caulked, and another coat of felt then laid thereon, to receive the doubling, which was worked from twelve to thirteen inches thick, at the fore ends, to fashion out and make a fair line with the front or fore part of the stem; the after ends were diminished to the thickness of the doubling of the bottom. On the fore ends of these thick strakes, after they had been caulked, iron plates of about three-quarters of an inch thick were secured round their ends over the stem, to protect them from being injured by the ice: these plates were continued in close connection all the way down the bow as low as the fore foot, or gripe, and the whole doubling well caulked and payed, similar to the mode practised with the original bottom.

The keel of the vessel was secured in the following manner:* The original garboard strakes were taken off the bottom, and a thick strake of elm placed on each side of the keel in lieu, with a coat of felt underneath, and bolted athwartships through the keel, and likewise up and down through the floor timbers, and the bolts well clenched within-board: in the outer edges of the said strakes, rabbets were formed, to receive the doubling of the bottom, from which place the doubling extended up to within about three feet of the gunwale, terminating there in a thick strake of oak, rabbeted in like manner, and let home to the timbers of the topside, bolted through, and well clenched; the whole of the chains were secured, and guarded by thick pieces of timber, payed and bolted under the channel, covering the links, and thus protecting them from injury, or being carried away by the ice.

Internally.

Large shelf-pieces were introduced all fore and aft under the beam-ends at the side, and dowelled or coaked up to the underside of the beams, and bolted in and out through the ship's side, as well as in an up and down direction through the said beams, and well clenched; pieces of a similar kind were introduced at various other parts of the ship, on the ceiling, and dowelled thereto opposite the other thick strakes on the outside of the bottom, as before mentioned, which made good the thickness of the doubling on the bottom; and these strakes were well bolted through the ship's side to each other, and clenched within-board, thereby connecting the fabric, and supporting the ship against the strain likely to occur by her being struck at the extremities by the ice: these pieces were continued from the bow to the stern, and united by breast-hooks and crutches, to strengthen those parts of the ship also: a tier of large beams was introduced about five feet below the lower deck, to support the ship's sides against pressure, provided the ship should be squeezed, in the event of her being caught between two fields or floes of ice. The ceiling was taken off the bow as far aft as the fore-step below, and several feet further aft at the lower-deck beam, in a diagonal direction; the openings between the timbers, and in the wake thereof, were then filled in solid, caulked and payed, on which surface were laid sixteen large breast-hooks, (in lieu of the plank taken off,) their sides well payed close to each other, from the deck down to the fore-step, all across the bows, well bolted through the outside stuff, and clenched within-board: the ends of those hooks were likewise confined by the fore-part of the lower-deck shelf-piece, which finished with a large hook over the others, and the same confining the fore-ends of all the fore and aft thick strakes that were dowelled to the ceiling, as before mentioned; against this large breast-hook, shores were placed, and bolted under the beams, with carlings between the said beams, their under sides dowelled to the upper sides of the shores, and bolted through, and clenched securely to each other. The shores were placed in a direction as square as possible from the curve of the bow, as may be perceived by the sketch or plan of the lower deck: shores were placed under the fore platform beams in like manner, and the whole most substantially secured. Hooks and ekings were placed in the bows above the lower-deck hook. Various other works were performed, more than can be fully explained: the fitting the bed-places of the officers and crew in such a manner that they might be taken on shore with ease, and formed into a dwelling, in case of shipwreck; the galley, and other fire-places, airing-stoves, with tubes for conveying hot air to different parts of the ship, with every convenience requisite for the voyage, mode of stowing the boats, davits, skids, and a roof, or covering of tilt, over the ship's deck, in case of her being frozen fast in the ice, and obliged to remain a winter in that situation.

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* The boxing was cut away, and a piece fitted and bolted in lieu, forming a connection with the lower part of the stem and forepart of the keel.

The ship was furnished with forty chaldrons of coals, stowed in the hold as ballast. The ship was armed with six eighteen-pounder carronades, with powder and shot for three years, and gunner's stores of every description for the same period.

References to the Plan.

A—Iron straps or plates across the bows, to prevent the ice from injuring the ship.

B—Thick doubling.

H
N
C

C—Timbers to fashion out the bows, to present a better figure for resisting the ice.

D—Original planking and doubling.

E—Timbers composing the original frame of the bows.

F—Riders fayed against the aft part of the breast-hooks, as an additional security to bind and connect them together.

G—Solid breast-hooks, their sides fayed close to each other, inside the bow, to strengthen the fore-part of the vessel.

H—Shores and carlings under the beams of each deck, dowelled and bolted, the fore ends butting against the riders, by way of trussing, and thus affording additional strength.

I—Thick strakes of seven inches, worked in the bottom, at the heads and heels of the timbers, with a rabbet on each edge, to receive the doubling; to break the joints of the plank of the bottom, bolted through the timbers, and longitudinal pieces inside, for the better connecting the whole fabric of the ship together.

K—Shelf-pieces for stiffening the sides and supporting the beam-ends.

L—Longitudinal pieces running all fore and aft, terminating against the breast-hooks forward.

M—Plank of the bottom covered with adhesive, or water-proof felt, before the doubling is brought on.

N—Doubling of oak, three inches thick, brought on over the felt, and the original bottom of the ship.

O—Thick garboard strakes bolted across the inner keel, and up and down through the floor timbers.

P—Inner keel composing the fabric of the ship.

Q—Outer or false keel, which may be carried away by the ship striking the rocks with violence without endangering her safety.

R—Keelson.

S—Upper Keelson to add strength to the lower part of the vessel.

T—Lining of oak, to prevent the chains from being carried away by the ice, solid pieces having been previously fitted, under the channels, against the side of the ship.

U—Capstans for heaving the ship ahead.

W—Rudder hung with a long bolt in braces, allowing it to lift two feet, or to be taken off when in contact with the ice.

Captain Ross, on his return, certified, that neither the masters, the mates, nor those men who had been all their lives in the Greenland service, had ever experienced such imminent peril; and they declared that a common whaler must have been crushed to atoms. Their safety, he said, must be attributed to the perfect and admirable manner in which the vessels had been strengthened when fitting for service.

VII.—On the Bijooga Indians,

By an Officer of His Majesty's Ship Ætna.

(Concluded from page 87.)

The village from which we had been obliged to make our retreat consisted of about a hundred houses built in the circular fashion common to this part of the coast. The houses, which appeared to be constructed of stone and mud, were generally small, and were built in the form of two concentric circles, by which means one house would be within the other. The whole were remarkably well thatched with palm leaves. The doors are low and narrow, the thatch of the roof projecting considerably over them. By the adoption of this method they are rendered dark and dismal abodes, and, from the want of ventillation, the heat in them is insufferable. In the inner circle are deposited provisions, and the space between it and the outer one, about four or five feet wide, answers for sleeping in.

The canoes that we saw were large and clumsy, and would contain about thirty men. The natives appear to have no idea of the application of a sail to them, although the use of it is well known on other parts of the coast. It would here save them much labour, as with the prevalent winds they might pass to the opposite islands, and back, with facility. Nor have they any idea of turning the immense quantities of cotton to account, that grow on the islands. They have no manufacture of cloth, although the little that they obtain by the chance visit of a stranger is highly prized by them. However worn it may be, even the fragments they preserve to the last.

The Bijooga Indians are tall in stature, and well-proportioned, many of them robust, but few are good-looking. There is a peculiar expression in their features, which bespeaks mistrust and suspicion. They wear their hair matted in various peculiar ways, which appear to depend on the taste of the owner, and it is profusely covered with palm-oil. They also anoint their persons with this oil most plentifully, but they do not appear to use any ochre like most other of the Indian tribes. The spear seems to be the weapon with which they are most familiar, but Spanish muskets are plentiful among them, although they by no means appear to be so well acquainted with the use of them. In firing a musquet, some fall down on the right knee, and rest the left elbow on the left knee; others sit down when they fire; and all of them, while they have the musket at the shoulder, betray in their features a breathless anxiety, which, the moment the musket is fired, finds relief in a vehement shout, while at the same time they let the musket drop from their hands. In our walk, we observed all the natives, both male and female, were armed with a short knife, in a sheath, attached to a belt which is fastened round the body. It is sharp-pointed, and is about the size of a large dagger.

Retaliation appears to be the principal law among these people. One of our party, in a playful manner, put his hand on the nose and chin of a little boy that ran up to him. The child, however, had been watched; this little act of kindness was observed, and a Bijooga, who was probably the father of the youth, attempted to do the same to the person who had thus treated the boy, and he was by no means pleased when he was prevented from doing it. Another incident also took place, which is highly illustrative of this feeling among them. A party of them were squatted on the ground, and we had been entertaining them with the green spectacles which some of us wore. They had enjoyed looking through them, and were in ecstasies at seeing every thing appear of a green colour. They screamed, leaped about in all directions, and expressed their belief, as it was translated to us, that the glasses were "witch." We became now very good friends, but it was as much as we could do to keep so, as we were obliged to resist their importunate demands for the buttons off our clothes. A button was preferred by them to a dollar, probably from its lesser weight and colour, and the facility of suspending it from the ears, as we saw a great many worn in that manner. Indeed, all of them wore either pieces of iron, brass, wire, or old buttons, in their ears. In the course of our amusement with the spectacles, one of us threw a little sand on the feet of one of them. This was not to be passed over, and the same Indian immediately retaliated in a similar manner. Very little provocation appears to give rise to dispute among them, and, considering every act as hostile, they resort immediately to the same.

One afternoon we discovered Antonio and some of his people at dinner, under a tree. No women were among them, and on inquiry we found that it was their custom to exclude them from their meals. They sit apart by themselves, and perform all the drudgery, such as cutting wood, fetching water, cooking, &c., while the men saunter about at their pleasure. The dinner consisted of cassada-root and palm-oil nuts mixed together in large calabashes, from which each one helped himself at pleasure with his fingers. Antonio being satisfied, directed one of the natives to climb a palm-tree, and he quickly brought down a large calabash-ful, which he had drawn through a tube inserted in the top of the trunk. It was no sooner handed to Antonio, than he drank it off at a single draught. These people are exceedingly fond of rum, and tobacco or snuff, for which they would give any article they possess.

The principal feature in the character of the Bijooga Indians is avarice, which can only be gratified by the possession of whatever they see. By their importunate demands, and the manner in which they received any thing given to them, they seem to believe that the visits of strangers are only for the purpose of making them presents. They received a few baubles from us with some expression of pleasure in their features, but thought of no return, and seemed to consider the presents as a matter of course. During the last forty years, they do not appear to have advanced one step in civilization. Their treatment of strangers, and the difficulty of access to their islands, will long perpetuate their barbarous condition. An inordinate spirit of revenge and retaliation is the spring of all their actions, and kindles frequent animosities. The slightest provocation occasions dispute, the least unintentional wrong must be redressed. The nobler attributes of our nature are unknown to them, and their minds are alienated from all moral improvement. Pretexts for indulging this passion will never be wanting; the restless and inflammable tempers of the Bijoogas will always lead them to detect or occasion some cause of offence, and the objects of their revenge will be watched and pursued till the most rigorous atonement shall have been made.

In justice to them, however, it must be observed, that there is too much reason to believe that they have not always been treated fairly by the few white people with whom they have had intercourse. And there is little doubt that their history would discover much that might be adduced in extenuation of their singular manners. It is said that the first white man who visited Kanyabac, imposed on the natives; a circumstance which may account for their behaviour to strangers. The result is, that they are insincere and unjust in their communications; one which often obtains among people of more pretensions to civilization.

VIII.—*Extract of a Letter from Captain Fitz-Roy, of H.M. Sloop Beagle, to Captain Beaufort, R.N. on the subject of the Abrolhos Bank.*[*]

"Rio de Janeiro, 10th April, 1832.

"On the 18th March we sailed from Bahia, and worked our way slowly towards the eastern limit of the Abrolhos banks. The winds, being light and easterly, favoured our sounding frequently, and taking good observations.

"Having reached the parallel of the islands, to the eastward of the easternmost soundings laid down in the charts, and finding no ground with three hundred fathoms of line, I began to steer westward, sounding continually, and keeping a sharp look out at the mast-head. At two P.M., on the 26th, we had no bottom with two hundred and thirty fathoms, and at four P.M. we found only thirty fathoms, without the slightest change either in the colour of the water or in its temperature, or any indication of so sudden a change in its depth.

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[*] From the Journal of the Geographical Society.

"I directly hauled to the wind, and worked back again to the eastward, to have another opportunity of confirming the place of the edge of the bank. We lost soundings as suddenly as we found them; and in standing to the westward a second time, with a grapnel towing astern by two hundred fathoms of line, we hooked the rocky bottom, and straightened the grapnel; but my object in ascertaining the exact beginning of the bank was gained.

"From that spot we had soundings in less than forty fathoms, until we anchored near the Abrolhos islands.

"I passed to the southward and eastward of them, because that side had not been examined, but time would not allow of my doing what I wished while so favourable an opportunity offered.

"At least a fortnight would be necessary to complete the survey of Baron Roussin, which appears, so far as we have examined, to be extremely correct. The soundings are so irregular, that little dependence can be placed on the lead. It is only by a multitude of soundings, by watching the sea when there is much swell, and traversing every part, with a sharp look-out at the mast-head, that the neighbourhood of the Abrolhos, particularly to the south-east, can be thoroughly examined.

"More than once we had four or five fathoms under one side of the vessel, and from fifteen to twenty under the other side. The *sauts de sonde*, as the French express it, are surprising.

"The tide, or rather current, which we experienced, set continually to the southward for the three days that we were near these islands, varying from half a mile to a mile and a half an hour.

"I supposed that the bottom was chiefly composed of coral rock, but was surprised to find no coral excepting small fragments growing on the solid rock, which is chiefly gneiss and sandstone. As most of the charts say '*coral rock*,' I have sent a few of the soundings for your inspection, and you will see by them that what has here been called coral is the coating of a solid rock formed by the deposit of the sea-water, mixed with coralline substances, and what a sailor generally calls 'barnacles.'

"My meridian distance of the Abrolhos rocks from Bahia, their latitude, and their size, agree precisely with those given in the French survey. But between Bahia and Rio de Janeiro, and consequently between the Abrolhos and Rio de Janeiro, there exists a difference of from four to five miles between us, this being the only point on which I have found any such difference either on this or on the Beagle's former voyage.

"Having made both passages, I venture to observe, that going within the Abrolhos certainly shortens that between Rio and Bahia very much; but yet I should not recommend it to any vessel unless she has reason to make unusual haste. The soundings are very irregular, varying suddenly from twenty to six fathoms; and there are both reefs and currents."

IX.—*On the Substitution of* Mixed-metal Castings *for Lead on the Fore-side of the Knee, and under the Fore part of the Keel of Ships.*

[The following was proposed by Mr. Willcox, of Portsmouth dockyard, in 1826, and is copied from the Papers on Naval Architecture, the subject having recently been under consideration.]

Having had my attention frequently called to the state of the lead on the under-side of the keel, and fore-part of the knee of the head of ships, when brought into dock for examination or repair, I beg to offer the result of my observations on the subject.

"It almost invariably happens that the lead below the water is very considerably fouler than other parts of the ship's bottom. In many instances I have seen great quantities (in some cases amounting to one or two ballast-baskets full) of testaceous animals, together with a variety of zoophitæ and algæ, collected on the lead, when the copper on the bottom has been almost free from them. The collection of these substances may probably be caused by the electro-chemical action produced by the united metals and sea-water, which seems to effect a partial decomposition of the lead, and consequently to cause the surface of the lead to be rugged, to which these substances adhere. This foulness must be disadvantageous, by impeding the velocity of the ship's motion.

It also frequently happens that the lead is worn through by the rubbing of the cables, particularly the chain cables. To prevent both these evils, I would recommend that the lead be substituted by mixed-metal castings, which would be little or no more liable to foul by its union with the copper than the copper itself, and which would effectually resist the rubbing of the chain cables, and at the same time would be less liable to be rubbed or beaten off by casualties. The advantage proposed by this substitution, is the prevention of the necessity of frequently shifting the lead as is now practised.

These castings for the under-part of the keel might be made in lengths of from four to five feet, and might be prepared for different classes of ships, and kept in store, so that they might be fitted in a few hours. I would recommend that these castings be made in separate pieces for each side, turning up the usual distance on the sides of the keel, having a space between them under the keel, which must be covered with a strip of copper previously to bringing on these castings, which would overlap the copper, and whose edges should be rounded. The castings should be secured with screws. The after-pieces may be put on, and secured first by removing one block, (which is easily effected by the present angular blocks of Sir R. Seppings,) the block being replaced when the after-pieces are complete. The next block may then be taken out, and the castings brought on in the same manner, shifting only one block at a time, which would supersede the present practice of being frequently obliged to suspend the fore-part of the ship for shifting the lead.

The castings to be fitted to the gripe and knee of the head would require a little more time, on account of the curvilinear form of the front; they would be screwed on as before, and would remain, when well fitted, many years, as it would not be necessary to take them off in the event of the copper being shifted, nothing more being required than to turn out the screws in the sides, (leaving those which would be in front,) and the edge of the copper sheets being placed under the lap of the castings, and the screws replaced, a close contact and good security would be effected.

This plan may at first be considered expensive, but if all circumstances attending the lead be taken into consideration, the superior advantage of this mode of fitting will, I trust, be obvious, and the expense ultimately considerably less.

X.—ADMIRALTY COURT DECISIONS. No. IV.

HIS MAJESTY'S SHIP THETIS.

THIS was a question of salvage, arising out of the property recovered from the wreck of the Thetis, and is one of considerable importance to the owners and salvors of property lost and recovered. In our first and second numbers we gave a full account of the difficult and dangerous proceedings by which the property had been recovered—accompanied by a plan and view of the derrick, as well as a sketch shewing the position of the wreck at the bottom of the cove.

His Majesty's ships Lightning, Algerine, and Warspite, having, from time to time, been engaged in assisting to recover the property from the wreck, claims for a share of the salvage were made on behalf of the officers and crew of each vessel, as well as by the Admiral on the station. The Thetis, it appears, was laden with valuable property, a portion of which was specie to the amount of 800,000 dollars; and having struck, on the night of the 5th of December, 1830, on the rocks off Cape Frio, she was wrecked and sunk. The quantity of bullion saved (the salvage of which was the question before the court) amounts to 750,000 dollars.

Dr. Adams opened the case on behalf of Captain Dickinson, of the Lightning, who claims to be principal salvor; and stated that it was with him the plan for recovering the property from the wreck originated; and that, but for his ingenuity and exertions in its execution, no attempt would have been made to rescue the specie from the wreck.

Dr. Matcham stated, that he appeared on behalf of the officers and crew of his Majesty's ship Warspite, which had been employed as a guardship to the wreck from the month of March, 1832, to the middle of July, and urged that they be admitted to share as salvors.

Dr. Curteis appeared for the officers and crew of the Algerine, claiming to be salvors to a considerable amount.

Drs. Burnaby and Lushington appeared for Admiral Baker, and submitted that he was the originator of the plan for recovering the property from the wreck; and that, as Captain Dickinson was merely acting under him, he (the Admiral) should be considered as principal salvor.

The King's Advocate, on the part of the owners of the specie, said, it was not their intention to dispute the services rendered by the salvors; but he confessed that the case did not appear to him to be one of that extraordinary merit set forth by his learned friends, on behalf of Admiral Baker and Captain Dickinson. He, however, would admit that no objection could be made to their claims for salvage by the owners, when the accounts were sent in.

We regret very much that it would take us far beyond our limits to detail the whole proceedings of this important case, with the various arguments urged by the several learned gentlemen who were employed on the occasion, in support of the claims of their respective clients, and we must, therefore, content ourselves by laying before our readers the principal grounds on which their arguments were founded, with the clear and concise decision of Sir Charles Robinson.

The amount of dollars saved by the Lightning, while engaged in the service, (including those recovered by the machine called "the derrick,") was 588,801; and those recovered by the Algerine amounted to 140,199; making in all 729,000 dollars; and leaving a residue of 81,000 dollars lost, out of the whole amount of 810,000. These, (the 729,000,) with some recovered by other means, make up the total of 750,000 recovered.

Dr. Lushington, on the behalf of Rear-Admiral Baker, urged, that on the information of the wreck having reached the Admiral, he proceeded immediately to Cape Frio, and gave every possible encouragement towards saving the specie. That he also placed every necessary means at the disposal of Captain Dickinson, to whom he entrusted the command and direction of the service, and placed one of the vessels of the squadron at his disposal. That it was he (Admiral Baker) who suggested the chain-cables being passed from cliff to cliff, which proved so successful—the net, &c. That the Admiral had employed an eminent engineer, named Moor, to assist Captain Dickinson; further, that he had caused two men to be transferred from his Majesty's ship Clio to the Lightning, whom he had known to have been previously employed as divers; also, that he had used every exertion to procure a diving-bell at Rio, but unsuccessfully; and that he had sent out two native divers at his own expense, independent of those from the Clio. That he had used all those exertions on his own responsibility, and at his own expense; and that he had placed carpenters and every possible means at the disposal of Captain Dickinson, by whose machine (the derrick) some guns and a small amount of dollars were recovered, and the former he declared to be unserviceable. That the Admiral having been ordered, during the prosecution of the salvage, to the Cape of Good Hope, by his Majesty's Government, on service, gave orders, before he sailed, to Messrs. Phillips and Co. at Rio Janeiro, to supply Captain

Dickinson with every thing necessary, and that he wrote to Capt. Dickinson to that effect. It was admitted that Captain Dickinson had suggested the plan of constructing diving-bells out of the iron water-tanks; but the Admiral had previously endeavoured to procure a diving-bell; and that Captain Dickinson could not have had those which were brought into use constructed, had he not placed artisans at his disposal, to whose ability much of the success was to be attributed.

It was argued by Dr. Burnaby, also, on behalf of Admiral Baker, as principal salvor, that he originated the adventure, which was conducted under his direction, control, and authority; that all the means for effecting it were supplied and provided by him, and could not have been otherwise obtained; that all this was done at the Admiral's responsibility and risk; and that his personal assistance was rendered as often as it could be of service. There was a fifth ground, admitted by Captain Dickinson, that he had been authorized by the underwriters, and that his conduct and exertions in the enterprise were recognised by them. The first affidavit of Captain Dickinson, dated in January, 1832, contained no contradiction whatever of the statements of Admiral Baker; no denial of his having suggested this salvage service, or of his having been the inventor or inceptor of it. The case of Captain Dickinson consisted of mere reasonings, totally illogical, without any attempt to disprove the statements of Admiral Baker. With respect to the responsibility of Admiral Baker, it went far beyond the limit of £100, which he authorized Captain Dickinson to expend for stores; he was responsible for a vast number of other expenses.

Dr. Adams, on the behalf of Captain Dickinson, urged, that with regard to the ingenuity displayed, the mere details of the case were sufficient to shew what that was, but he referred the Court to the testimony of Captain Owen, one of the most scientific seamen in the service, who was five days at Cape Frio whilst the derrick was in operation; who declared that its construction and working excited his admiration, that it reflected great credit upon the talent and seaman-like tact of Captain Dickinson, and that the work could only have been accomplished by British seamen, and was never equalled within his experience. It was, however, contended on the part of the owners, that the service, though meritorious, was not one of extraordinary merit; and that the salvors being in the navy, it was their duty, as public officers, to render all the assistance they could, without looking to any special reward, particularly as the vessel was in his Majesty's service. This was a doctrine contrary to what had been frequently laid down, for salvors in the public service had been remunerated just as if they had not been so. The learned counsel cited the cases of the Elliotta—2 Dod. 75; the Frances Mary—2 Hagg. 89; and the Reliance, —Feb. 5, 1811. When treasure was laden on board a King's ship, Government did not insure its safety; therefore it was not responsible for its loss, though, from being a King's ship, it was the more peculiarly incumbent on the admiral of the station to take measures for recovering it. Another proposition was, that the greater part of the preparations were necessary to raise the stores of the ship: but this was absurd, the value of the stores was not more than £970. Besides labour and risk, and his shattered constitution, Captain Dickinson had suffered a pecuniary sacrifice from the profitable service on which he would have otherwise been employed in taking bullion on freight, which would have obtained for him from £2,000 to £3,000. The learned advocate contended that all Admiral Baker's claim rested solely on his own affidavit. He denied that he was responsible for the stores sent with the sloop; they were demanded by the commander of the sloop, and he was responsible for them; and what was the amount? The utmost limit to which the Admiral consented to go, before he had received the sanction of the Admiralty, was £100. The learned advocate then commented at considerable length upon the exhibits offered by Admiral Baker, and upon the hardship experienced by Captain Dickinson in having been recalled by Lord James Townshend before the service was completed. In conclusion, he submitted, that, as to the amount of salvage, the Court should go to the fullest extent it had ever done; and as to the question who were the salvors, there could be no doubt they were the officers and crew of the Lightning, and those of the Warspite present at the operation. The case of Captain de Roos (who succeeded Captain Dickinson) he left to the Court, unless it should be intended to allege that the former had superior merit.

The King's advocate, on behalf of the owners, began by observing, that all the other parties in this case, however they differed amongst themselves, combined to beat down the claims of the owners, who, if the propositions of his learned friends were law, would be entitled only to a small pittance of their property. It had never been the intention of his party to lay down a proposition so absurd at the present day, as, that the salvors were not entitled to any reward because they were public servants: his learned friends had found it convenient to misunderstand the object of the owners. They admitted the important services rendered by the salvors, but they said that as the salvors were public servants, and the means employed for the preservation of the property were derived from the public service, these were circumstances which the Court should take into consideration in awarding the remuneration; and they contended that Captain Dickinson was not entitled to a distinct reward independent of his commander-in-chief. He (the king's advocate) admitted that salvors in the public service were equally entitled to reward with those in private service, though they were somewhat differently circumstanced, and the stores employed were charged to the owners of the property. He admitted that the service had extended to a long period of time, but that length of time was not calculated to ensure its success. He admitted that there had been a display of skill, but it was skill misapplied; and if the measures recommended by Admiral Baker had been adopted, the success would have been speedier. If the owners were called upon to pay for this time, and for the employment of so many men for 18 months, it was important for the Court to consider whether the measures were judiciously employed. The chain cable, it clearly appeared, was productive of all the advantage and benefit to the service, for only 50,000 dollars had been salved by the derrick, which had occupied two or three months to complete; and if that time had been otherwise employed, it would have been more beneficial, and the treasure might have been earlier saved. He (the King's advocate) did not mean to impute to Captain Dickinson any want of ingenuity, or to say that he did not deserve credit for his invention, but his ingenuity had been unfortunately misapplied; so that his learned friends had no right to insist on the merit of ingenuity, unless they could shew it had been beneficially employed. It was a legitimate objection to say, that by the construction of the derrick, contrary to the direction of Admiral Baker, valuable time had been lost during the best season of the year.

The foregoing arguments, in detail, occupied the attention of the Court for several days; and on the 20th of March, the following judgment was given by Sir Charles Robinson:—

The frigate sailed from Rio de Janeiro on the 4th of December, 1830, with a private freight of bullion, to the amount of 810,000 dollars, and was wrecked the next day at Cape Frio. By the exertions of Captain Dickinson and the officers and crew of the Lightning, in the first instance, and of those of Captain De Roos and the officers and crew of the Algerine, after Captain Dickinson left the wreck, 750,000 dollars were salved, beside stores. The questions before the Court were, first, the amount of salvage; secondly, the parties amongst whom it was distributable. The learned Judge was satisfied that Admiral Baker fully intended, in the first instance, to make the attempt to save this valuable cargo. The matter, on his return from Cape Frio to Rio de Janeiro, became a subject of consideration amongst his officers, and particularly by Captain Dickinson, who submitted plans and models for the purpose. This part of the case had been the subject of much controversy: one claimed the merit of suggesting the diving bell, another of the net, and so on. He did not attach much importance to these points, or to the question of priority: Captain Dickinson had fully proved that he was the *dux facti*, the conductor of the enterprise, in the first instance, and on that rested his claim of being actual salvor. The Court, in adjudging questions of salvage, looked primarily to the actual salvor, and usually rejected all claims of prerogative rights; and he was bound to say that Captain Dickinson stood in the predicament of actual primary salvor.

The learned Judge then read the narrative of the operations performed under Capt. Dickinson; and observed, that the merit of inventing the derrick had been disputed, as well as other matters; but he saw no reason to deprive Capt. Dickinson of the merit of adopting it. The learned Judge then adverted to the painful nature of the service, and read the affidavit of the surgeon of the Lightning, shewing the effects produced upon the health of officers and men by exposure to the climate, by the insects, and by the severity of the labour. He then read the narrative of Capt. de Roos, who took up the service after Capt. Dickinson left, employing a different mode of operations. The result of the whole was, that on the 27th of July, when they left the Brazilian coast, 750,000 dollars had been recovered, being fifteen-sixteenths of the whole property; and so, continued the learned Judge, terminated a service carried on with continued exertions during 18 months; a service almost unprecedented in point of time, not easily surpassed in merit, and unequalled in respect to the amount of property saved. The owners, in the first instance, had denied the right of King's officers to claim salvage, and had contended that Captain Dickinson had acted under the directions of his commander, and had no right to separate remuneration. These topics, however, had been abandoned in the argument. Admiral Baker had, at first, represented himself as principal salvor, partly because he was recognised as the agent of the underwriters, and partly because he undertook the speculation on his private account, and on his own resources; but he (the learned Judge) did not find that these propositions were maintained by his counsel. Captain Dickinson alleged that he had depended upon his own resources, and acted without the control of Admiral Baker in this particular service, and received no directions from him. The learned Judge, however, thought that Captain Dickinson's own statement in his log and in his correspondence—the very form of his appointment, his recall, his demands of stores, the submission of all his plans to the approbation of the Admiral—disproved the allegation of this being an independent service. It was alleged, on behalf of Capt. Dickinson, that there was no such thing as constructive salvage, and there was no difficulty in acceding to that proposition as it stood; but though he would not define the exact line where the Admiral on a station went beyond his official duty, in this case he had undoubtedly furnished men and stores from his own ship, on his own responsibility and credit; he had advanced 100l., and made himself answerable for more; and the learned Judge thought that the responsibility thus assumed by the Admiral had been very beneficial to the service. If an admiral was entitled to share in any case, this was such a case, in which, by the interposition of his authority, as well as by the resources at his command, he had been assuredly conducive to the success of the enterprise. The case of the Aquila shewed, that a magistrate, and *à fortiori* an admiral, might be considered as an actual substantial salvor, though not personally present. He therefore thought Admiral Baker entitled to share in some measure, and, attending to all the circumstances of the case, which was quite a novel one, he should adopt the proportion of remuneration, in respect to him, laid down in the proclamation of the 13th of July, 1827. He was not willing to discuss the claims of the Admiralty with great minuteness; but it should be considered, that in a service of this novel kind, lasting for 18 months, the public funds committed to their care were necessarily employed for the purposes of the salvage, and the owners did not dispute the claims of the Admiralty. In cases of meritorious salvage, this Court had allotted from one-third to one-ninth; and he should allot in this case to the actual captors 17,000l., which was about one-eighth, and, taken with the expenses, one-fourth, of the gross amount of the property. He should allot 1000l. to the individuals named in a list which had been drawn up by Captain Dickinson; 500l. among persons who had performed extraordinary duties. To the widow of Mr. Moore, the engineer, who had been engaged in the services, and who] had lost his life, the Court allotted 200l., and the crew of the Adelaide 300l. With regard to the officers and crew of the Warspite, he had found no precedent which would authorize him to admit their claims. The Lightning and Algerine to share in the proportion to the property saved.

XI.—A SAILOR'S ADVICE TO HIS SON,* ON ENTERING THE ROYAL NAVY.

(Continued from page 161.)

LETTER VII.—*On Exercises and Amusements.*

SHOULD you ever meet with "Lee's Translation of the Odes of Pindar," you will find in it Mr. West's dissertation on the Grecian games; and you will find therefrom the celebrity of gymnastic exercises of antiquity. But, having hitherto avoided classical references, as being irrelevant to my present purpose, I shall confine my observations to the modern games, and the benefit and utility of such manly recreations.

If, in order to give a vigorous tone to the mind, it be necessary to search diligently after truth, to render it efficient; it is no less requisite to inure the body to hardihood and fatigue—indeed, their physical relation to each other is so close, that a unison of tone will be at all times reciprocal, and languor or inertness in the one will induce corresponding affections in the other; that is, when the whole constitution is salutary and exempt from partial or general disease. To those engaged in the profession of arms, athletic exercises will be of peculiar benefit, conducive to an accurate estimate of personal prowess, the exclusion of petty rivalry, a uniform frame of cheerfulness and activity, and superior address and confidence when in contact with a contending foe. They disperse the humours engendered by sedentary application, and, expanding and bracing the elasticity of the lungs and digestive organs, they invigorate the entire system, and preserve the mind in a state of clear perception, capable of directing its powers on every sudden emergency with energetic and unclouded sagacity.

In the present day, pugilism ranks high in the estimation of some, and, though serviceable in the foregoing considerations, it is more the appropriate exercise of a rustic prize-fighter than of a gentleman. The greatest objection that I find to it, as well as to wrestling, is the necessary contact of persons, which frequently, by accident, elicits serious contests out of amicable trials of strength and skill. But this objection does not amount to a prohibition of the practice of either, when you can pursue them with mutual good-will and friendship; although engaging with boys of irascible tempers should be avoided.

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* At the age of thirteen.

The prize combats to which the exercise gives rise in this country, I am not inclined to view with any satisfaction. I acknowledge that I am not sufficiently an amateur to look on without emotion, and witness two brave men, from a mistaken idea of honour, mutilate each other so dreadfully, to gratify a surrounding circle of interested spectators. In the course of your future service, you may possibly witness enough of bloodshed, to be impressed with the reflection that it is one of the most lamentable consequences of the imperfection of human institutions, and that, however dazzling the illusion which invests the character of those aspiring men who occasion such hecatombs of human slaughter, it is fallacious, and obscures from our perception a just estimate of their pretensions to our admiration. Humanity will teach you that they are much more deserving of execration than any description of imitation or praise. This is a subject which ambitious sovereigns and conquerors are interested in suppressing; but, until they can annihilate in the human breast the incontrovertible voice of truth, their wishes will be unavailing. Experience will hereafter open to your conviction, that mankind, excited by ambition, heated by contention, and exasperated by the passion of revenge, are as ferocious as the wild beasts of the desert; that, in the fury of battle, and subject to such maddening excitation, they will wallow with as savage and unrelenting delight in the flowing blood of their fellow-creatures. Ever then, in such moments, listen to the voice of reason and humanity, and remember that while an unenlightened crew, from feelings, above which you are far elevated, are flushing their weapons in indiscriminate carnage; the officer fights to overcome for honour's sake, for the protection of his country, for the protection of those under him, and even for the protection of his adversaries, for self-defence, for the conquest and the love of peace. If you do this, you will never unsheath your sword without confidence, nor return it to the scabbard unrewarded by the gratifying consciousness of having done your duty.

Expertness in going aloft will be beneficial to your health and welfare: it will bring you into notice, will enable you to examine and ascertain the nature and use of every part of the rigging, ropes, masts, yards, blocks, &c. By familiarizing yourself to agility in that respect, you will learn to mount the masthead with fearless and secure confidence on occasions of the greatest apparent danger. In leisure moments, during fine weather, when the ship is sailing gently on her course, you will experience great delight in quitting the close and confined atmosphere of your berth, to enjoy the pure air and beautiful prospect from aloft. I recollect many moments in my early years when I have sat, meditating with rapture on the scene around me, for hours on the royal yard. The boundless expanse of water gently undulating beneath a light breeze, studded far and near with innumerable vessels, some close by, vying with the progress of your own ship, others, varying in figure and size, pursuing different courses under their swelling sails; others again, still more remote, a scarcely visible speck on the ill-defined horizon: all these present a beautiful and interesting scene to a contemplative mind. I could enlarge much on this topic, but to do so would far surpass the limits on which I have determined. Enough however has been said, to suggest to you an amusement which is meritorious, innocent, and agreeable.

The military exercise of fencing, and the use of the broad-sword, are also of superior and valuable order, and ought to be generally adopted in the navy. Their benefit consists not only in arming the individual with a scientific series of attack and defence, with a commanding management of his weapon, and an advantageous exercise of his vision and agility, strength and temper, but they also have the greatest effect in giving an elevated and manly carriage to his person on all occasions. They expand the chest, erect the head, and place the individual who follows them firmly on his legs. They teach him stratagem, circumspection, ready perception, and self-command; a graceful, firm, and flexible disposition of his limbs; and, while free and unreserved, they instruct him to thrust or to parry, and to be constantly guarded in a moral as well as personal signification.

I am not what is called "a dead shot," and, not being a corporal in a light infantry corps, it is of little consequence; but as shooting affords amusement to many people, and is considered a manly accomplishment, I shall not pass it by, especially as there is one propensity resulting from it, which it is necessary that you should be guarded against, namely, *a partiality for duelling*.

Dexterity in pulling a trigger frequently renders the amusement agreeable, and, from long-practised precision at his mark, the matriculating duellist aims to hit his man. If a person of vain, assuming levity of disposition, by his arrogance wilfully provokes a meeting, the ground is taken, his antagonist falls, his vanity triumphs, and he feels no remorse. But this same vanity requires feeding with the imolation of successive victims. He repeats his recreation, until a lucky and unexpected ball from some unskilful hand sends such a pest to account for himself elsewhere. It has been my lot to associate with many characters of this description, and it may be yours to do the same. These young men, whose hot and fiery dispositions know no restraint of morality or religion, associating with kindred spirits, and fuming with the intoxication of false courage, under the pretext of certain fanciful notions of false honour of their own creation, imagine that they may insult with impunity the cool and quiescent portion of their brother officers. But I will here expose to you the futile and contemptible tenets of these bullying sparks, when tried by the perfect and incontrovertible rules of true manly honour, in order that you may avoid encountering them, when those rules will permit.

True valour reserves itself to be exercised in the hour of danger, in the face of the enemy, in the fury of the storm, and in the presence of death. The qualities of true valour are meekness, calmness, passiveness, forbearance, and deliberation; and though it may sometimes involuntarily flash forth in a transient expression of indignation at instances of meanness, falsehood, duplicity, or treachery, it must be highly provoked indeed to become a designed aggressor. True valour is humble, generous, liberal, kind, and conciliating; the friend of the weak, the irresolute, and the oppressed; ever careful of giving offence to any one, and, in tacit satisfaction with itself, makes no parade; never wantonly trifles with the feelings of others, nor provokes the humblest associate. Courteous, gay, and invincible, true valour plumes the crest of chivalry with genuine heroism; will die to defend a comrade, or to succour a fallen foe.

False valour is selfish, captious, quarrelsome, boisterous, and inflated with vanity; makes an exhibition in trifles, provokes insult from a secret consciousness that it is deserved by itself, bullies the timid, endeavours to irritate the patient and placid, and to intimidate the young and inexperienced: but in the midst of real and imminent peril, false valour cracks like the flash of its own pistol, and, shrinking beneath the gaze of collected fortitude, disperses like smoke. Stupified by the actual presence of real danger, it stands astounded on the brink of destruction, incapable of an effort to avert the impending calamity; whilst accumulation of peril only serves to rouse the intrepid mind to an energetic exercise of its inexhaustible resources: rising with the increase of surrounding tumult and disaster, the real dignity of manhood then asserts its sway; in the fulness of heroic magnanimity, calmly triumphs over its hectoring adversaries, and, the danger past, retires again within its original tranquillity of soul.

This fanfaronade of courage in a man resembles coquetry in a woman; both assume artificial means; under specious imposture, they endeavour to conceal real deficiency, and both are unworthy of serious notice. There is no great danger to be apprehended from this sort of gentleman; but it is better to keep him at a distance than to incur the risk of being infected with his mania. The youngest boy can pass very little time in the cockpit of a man-of-war without giving many proofs of his exuberance or deficiency in physical courage; and it is quite erroneous to imagine that the matured officer can fail in that respect, although, from a want of penetration or presence of mind, he may waver in a prompt and energetic exercise of it. Rashness is as far removed from true courage as pusillanimity: the high-minded officer engaged in battle cannot be perfectly indifferent to surrounding observation; nor is his own person ever in his thoughts when he leads in front, or retires in reserve, according as the ultimate concentration of his designs may require. To urge a combined operation to the point of success, his presence may be required in various directions, especially if the resistance of the enemy be powerful and protracted, and his officers fall fast around him; but the responsibility of his charge, the obligations of his duty, and the necessary exercise of his mental powers, entirely exclude all personal consideration. To such a man, honour is vital; it is a sacred jewel within his own breast, of which he is the natural guardian. Unsullied as the polish, and piercing as the point of that badge of his profession which he cannot wield but with distinction, his fortitude is more true than its temper; more like the adamantine cohesion of the pure and sparkling diamond, it shines serenely brilliant in its own lustre, infrangible, inflexible, inexhaustible; it shines to protect, to conquer, and to save. Surrounded by the most appalling danger, he calmly exercises the energies of his mind to overcome it, and, regardless of self-consideration, he confidently trusts the immediate protection of his person to his followers, its ultimate safety to his God. The danger past, with the pen of impartiality and modesty, he can point a moral on the scene in which he has borne so conspicuous and so honourable a part. To him the present question of duelling is but a joke, to which no provocation need tempt him. But there may be circumstances when a younger officer (although he may be incapable of insult) may be called on to repel and chastise the aggression of another with more than words.

Let it ever be remembered, that in many cases an appeal to the jurisdiction under which you serve will be most consistent with your duty, and with your honour, as it can never give a decision against either, if you yourself are true to them; that self-conquest is one of the most arduous, and most glorious, of victories; that you may possibly be wrong; that you have a soul and a body devoted to a future state, in which you will be accountable for what you have done wrong, or omitted to do right, in this world; that he who is supported by conscious rectitude can never suffer derogation from the insolence or folly of another; that he who is not supported by that consciousness under affronts which may prelude an affair of honour, deserves castigation;—but that an apology should never be rejected; and no recourse be had to the final appeal, until you have applied all the foregoing considerations to the case in point. Speech and gesture are liable to various interpretations, but the lie (either implied or direct) and a blow, can never be mistaken, nor tolerated by an officer, under any circumstances; and he who could put up with either, is unfit and unworthy to join honourable society. But it is rarely that an intelligent officer, of upright character, can become subject to either. He will always keep within the sphere of his own honour, and, although liable to inadvertency, the uniform dignity and correctness of his deportment will generally keep every species of affront at a distance. It is the imbecile, irascible, and superficial, who so often expose themselves to obloquy, which, perhaps, they can never rectify in the whole course of their future lives; and it might be a good thing, if, in all military and naval societies, courts of honour were established, to decide solely and definitively on questions of this nature. They might be a considerable check on those petty jealousies which, from trifling difference of opinion and character, frequently ripen into irreparable quarrels; and by repressing such discordant ebullitions, would encourage and promote a frank and generous sympathy of manly regard, and that harmonious urbanity of disposition, which is ever ready to concede in mere matters of opinion, and which should ever prevail among high-spirited characters embarked in the same loyal and patriotic career.

Should it therefore suit your fancy ever to become an adept at a keyhole, or a pistol candle-snuffer, I request that you will guard against pluming yourself on your accomplishment. I shall reserve the remainder of this letter for another opportunity.

(To be continued.)

WORKS OF NAUTICAL AND GEOGRAPHICAL SCIENCE AND ART.

BOOKS, CHARTS, INVENTIONS, ETC.

Ballingall's Mercantile Navy: The Mercantile Navy Improved; or a Plan for the greater Safety of Lives and Property in Steam-vessels, Packets, Smacks, and Yachts; with Explanatory Drawings, and an Appendix, containing the Author's Evidence before a Committee of the House of Commons, in consequence of the Loss of the Rothsay Castle. By James Ballingall, Manager of the Kirkaldy and London Shipping Company, and Surveyor of Shipping for the Port of Kirkaldy. London, W. Morrison; W. Reid, Leith; J. Cumming, Kirkaldy; and G. S. Tullis, Cupar. 1832.

In a former number, we took a cursory glance at this work, and we at once expressed our favourable opinion of it. Mr. Ballingall has devoted a great deal of attention and perseverance to one of the most important branches of science, that of ship-building, and has succeeded in introducing several valuable improvements into it. It is lamentable to see the first maritime state in the world, for as such we must consider Great Britain, with a mercantile marine of the very worst description. No doubt, there are many causes for this evil, among which the state of the tonnage laws is the most prominent, on the one hand; and on the other, the badly-found condition in which the ships are sent to sea, thereby risking both lives and property to an alarming extent. Leaving these glaring abuses to be remedied by the legislature, which only can control them, Mr. Ballingall, as an architect, has set about improving the vessels as he has found them, and richly deserves all the encouragement he meets with. The experience which he has had in witnessing the almost instantaneous and fatal effects of some of our frail ships grounding on rocks, has suggested to Mr. Ballingall, that the part of the vessel on which her safety then depends was capable of being rendered stronger. With this view, he proposes to give them a good stout ceiling or inside lining, and to caulk it so as to be thoroughly water-tight. He first fills up the spaces between the timbers, and thus gives the vessel a complete solid bottom, formed of three distinct layers of wood. The only objection that we can see to this is, that the lower surface of the ceiling is liable to become wet, without there being any possible means of ever drying it, and hence it may become subject to rot. Mr. Ballingall, however, completely meets this objection, and instances two smacks, the Kirkaldy and Fifeshire, built at Leith in 1826, and fitted afterwards on his principle of solid bottoms, at a cost of less than £30 each. The effect is, that they have ever since been thoroughly water-tight, and their pumps have remained idle. They have moreover become favourites with passengers, in consequence of being entirely free from bilge-water; and we understand that goods by them are insured at a less premium than formerly, on account of the greater faith reposed in them. They are, in fact, admitted to be the best smacks out of Scotland. We have therefore no hesitation in saying, that Mr. Ballingall's work should be in the hands of every naval architect, and that he has proved his system to be well worthy of trial. It is quite certain that he reduces the danger of a vessel being wrecked after she grounds; and, in the event of an extreme case, that he adds to the chances of saving the life of the crew, by interposing so much solid work, and thus giving time to escape from danger, which otherwise would be attended with inevitable destruction.

A Map of Australia, compiled from the Nautical Surveys made by order of the Admiralty, and other authentic documents, by James Wyld, Geographer to the King.

The Terra Incognita of the ancients is beginning to assume the appearance of a civilized country, by the repeated and energetic exertions of British discoveries. The course of the Murrembidgee and the Murray forms an important feature among our recent additions in the south-east corner, on account of the extent of country through which these rivers pass; and the numerous discoveries in the west are also important from the quantity of good land which has been found there. The map before us shews these discoveries on a small scale, and, as a general map of the whole country, is a useful acquisition to the geographer.

Green Island Harbour, in the North-west angle of Jamaica, by Lieut. B. Baynton, R.N., 1832. Quarto. Admiralty. 1833.

A neat little plan, calculated to be of much service to small vessels. "This little port," the title tells us, "is in a highly-cultivated district, to the westward of St. Lucia; but it appears to be gradually filling up, and during northerly winds a heavy sea sets in."

FORT-ROYAL BAY, in the island of Martinique, by M. Mounier, Ingenieur Hydrographique de la Marine, 1825. Quarto. Admiralty. 1833.

This little plan is reduced from the elaborate and beautiful charts of M. Monnier, and shews the intricate and dangerous navigation of the bay.

SAN JUAN DE NICARAGUA, by Mr. George Peacock, Master of H.M.S. Hyacinth, 1832. Quarto. Admiralty. 1833.

A useful plan for vessels frequenting the important harbour of Nicaragua. It contains also concise directions for their guidance.

GLASS BALANCE-SPRINGS TO CHRONOMETERS.

OUR readers will peruse with much interest the following letter, which we have received from Messrs. Arnold and Dent, on the occasion of their having applied to the chronometer a balance-spring made of *glass*. An invention so novel of its kind cannot but excite the admiration of those who appreciate such works of ingenuity, and an inspection of its beautiful and regular cylindrical folds will amply repay the curious. We sincerely wish the ingenious artists every possible success, both on the account of science and their own. The navigator will marvel hereafter, on measuring differences of longitude, or intervals of time, which is the same thing, with as much accuracy, by means of a glass spring, as one of steel; yet that this will be done, we fully anticipate; and it may not be going too far to say, that it may even be done to a greater degree of exactness. What would our ancestors have said to this?

" MR. EDITOR,

" The great interest you have evinced, in your Magazine, with reference to the various experiments we are engaged in with the chronometers, has induced us to hope that our present communication on a very important branch of that department of mechanical science, will not be deemed unworthy of a place in your valuable pages.

" In your last number, for March, you kindly noticed the success which had up to that period attended our endeavours to investigate the magnetic influence on the chronometer; we further beg to state, that our results continue to be of the most satisfactory nature, and entirely answer our fullest expectations. These experiments, as may be imagined, will occupy some space of time before they can be concluded. We hope, however, to be enabled to lay the final results before you within a short period. We trust that the motives which have led us to make so many rigid inquiries into the mechanism of chronometers are sufficiently understood to be directed to the public advantage; and we therefore consider it prudent, whenever any new theory may arise in our minds, to give the greatest publicity to it, that our hints may lead at once to the exercise of the genius of other practical men, and eventually bring to light the many latent causes which affect the true performance of the chronometer.

" With this feeling, therfore, we now beg to offer a few remarks on the imperfect state of the balance-spring of the chronometer, and to put you in possession of some experiments which we have lately made, tending to inquire how far *glass* might in this respect be substituted for metallic substances. The balance spring is a more important member in a chronometer than it is generally supposed to be. The isochronal vibrations of the balance owe their main source to its perfection; in fact, the relation that gravity bears to the pendulum of a regulator is conveyed by the balance-spring to the chronometer. But its importance cannot be better shewn than by referring to the rates of most chronometers, which are found to be affected by the simple circumstance of the difference in the metals which compose the balance-springs. If we refer to chronometers No. 605 and 608, the rates of which were published by you in your Magazine for February, and compare them with No. 662 and 663, we shall find that the tendency of the two former is to lose on their rates, whilst the direct contrary to this is obtained in the two latter, by their assuming a disposition to increase on a gaining rate. The difference in the respective rates is attributable only to the consideration that No. 605 and 608 have both of them gold balance-springs, whilst 662 and 663 have springs of hardened and well-tempered steel. The proof of this consists in the fact, that, if the springs of 605 and 608 were applied to 662 and 663, and vice versa, the reverse effects would immediately result.

"There is also a difference produced in the rate of a chronometer, by the employment of a hard and tempered steel spring, compared with one made of soft steel. The former, as we have shewn, produces a gaining rate, but the latter influences the chronometer in a contrary manner, and, like the gold springs, but in a greater proportion, causes the chronometer to lose. Two instances of the soft steel springs are to be found in No. 615 and 617, the rates of which were published by you in your paper to which we have alluded.

"The springs which are now, we may state, almost universally used, are composed of hardened and tempered steel; a fact which accounts for that increase on a gaining rate which is constantly to be observed in new chronometers. But this evil is only of a temporary nature, continuing generally for about two years. The trial at Greenwich furnishes us with many examples of this kind, where chronometers, which for two or three years have been on probation, and have failed from this cause only, and without being removed from the Observatory for the purpose of any correction, have, after this lapse of time, outgrown the evil, and at length succeeded in obtaining premiums. As you have before observed, this is a great proof that the present state of Chronometrical Science is not discernible from the public trial of chronometers at Greenwich.

"The following is a tabulated view of the number of chronometers which have annually been deposited on public trial, from its commencement to the year 1831, by which may be seen the great proportion of those which have gained on their rates compared with those which have lost.

	Number deposited.	Gained on rate.	Lost on rate.
1822	31	25	6
1823	36	31	5
1824	31	27	4
1825	48	34	14
1826	59	38	21
1827	58	46	12
1828	70	62	18
1829	57	50	7
1830	73	61	12
1831	63	52	11
	526	416	110

"Another very important matter, to which we wish to invite particular attention, is this circumstance—If we take several of the best chronometers at Greenwich, and compare their rates for a few days at the two extremes of temperature, we should find that both at the maximum and minimum, the rate will be a losing one. This anomaly cannot arise from any defect in the compensation, for if it were so, and the thermometer at the minimum and the rate then a losing one, we ought to have a gaining rate when the thermometer is at the maximum. But this is invariably not the case, so that we can only attribute the above-named effect to the want of affinity existing between the metallic particles which compose the balance-spring.

"This is a subject which is well worth the attention of the scientific chronometer maker, since it involves the existence of difficulties in the most important part of the adjustments of chronometers.

"There are several objections to be made to the use of the gold balance-spring in a chronometer. One great desideratum is, that the balance-spring should be formed of an homogeneous substance; but the difficulty with gold is this, that it requires more alloy, and in this state its liability to break is very great. The specific gravity also of gold is very objectionable, so much so, that it has not sufficient power to sustain itself; and when approaching the vertical position, the distortion of its cylindrical form is apt to destroy the centre of gravity of the balance, and by its continual state of tremor and agitation produces very wide extreme daily variation.

"Most of these evils are removed in the adoption of a steel spring; for instance, the specific gravity of steel being considerably less than that of gold, the errors in the extreme daily variation with steel springs are partially removed by their stability and retention of their true form. Still there are evils which the very composition of steel balance-springs introduce. But without entering into the question of the effect of magnetism upon them, which it will be our object hereafter to shew, their great liability to rust is an insurmountable difficulty. The smallest particle of moisture by corroding the spring will deprive it of some degree of strength; and while it will cause the chronometer to lose on its rate, will also destroy its isochronism.

"There can be scarcely any attempt made to preserve the steel balance-spring from oxidation, that we have not tried.

"The experiments were all made on chronometers previously perfect in their adjustments for temperature. And we found on the application of any substance, whether in the shape of a metal, varnish, &c., that the previous perfect adjustments for heat and cold were so materially altered, as to convince us of the impracticability of applying any coating on the surface of the spring. On the whole therefore we conclude, that our objections to a metal balance-spring are well founded. We have tried every device in alloying gold and steel respectively with copper, silver, and platinum, and after useless attempts to gain a spring void of the faults we have mentioned, we began to consider how we could remove metals from the question altogether. The fittest spring for a balance we conceived would be that composed of a substance very light in its nature, of great elasticity, and void of expansion as much as possible; moreover, that it should be free from oxidation. That which seemed to accord best with these notions was Glass; and after great trouble and expense, we have succeeded in making a very perfect spring of that substance. We have had it in hand but a few weeks at present, so that we cannot form a very decided opinion of its merits; as far, however, as we have proceeded, we are convinced that it will answer all the purpose of compensation, &c., with equal, and perhaps more certainty than metal springs, and of its durability we are quite assured, since we have exposed it to the severest tests.

"We hope shortly to be enabled to present you with a more complete account of the results of this discovery, as well as those of the magnetic experiments to which we have before alluded. Supposing, however, that the glass balance-spring should not in the sequel answer our expectations, we shall still have the satisfaction of knowing that it will afford us the means of establishing a minimum of the loss of strength or elasticity in metals and substances, caused by heat during the course of some experiments which we are contemplating.

"We have the honour to remain, &c. &c.

"ARNOLD AND DENT."

THE NEW NAUTICAL ALMANAC.

CHANGES IN RULES OF NAUTICAL ASTRONOMY.

(Continued from page 167.)

Latitude by Moon's Meridian Altitude.

12. The Greenwich date in mean time for the instant of this observation may be got as explained in Art. 5, 6; or it may be got by correcting the time of meridian passage (page IV. of each month) for the longitude.

When the Greenwich date is thus got, the moon's declination, which is put down in the new Nautical Almanac for *every hour* at Greenwich, may be taken out by correcting by a proportional part for the minutes of the date from the column of diff. for 10^m; but perhaps as easily thus:

[*] *Rule for taking out Moon's Declination.*—Put down the moon's declination for the hour of the Greenwich date, and under it that for the succeeding hour, marking each N. or S. according to its name. Take the difference when the means are like, and sum when the names are unlike. To the *prop. log.* of this diff. or sum add *prop. log.* of minutes and seconds in Greenwich date, and then subtract 0·47712 from the sum. The result will be *prop. log.* of the part required; which being applied to the first declination taken out, according to the names as usual in other cases, the result will be the declination required.

Rule 2. By means of a Table of Logistic Logarithms, the operation is more simple. To *log. log.* of diff. for 1^h add *log. log.* of minutes and seconds in Greenwich date, the sum will be *log. log.* of part required.

13. The moon's hor. semid. and hor. par. are taken out for the Greenwich date as usual hitherto.

The remaining part of the work will be the same as heretofore.

Latitude by a Star's Meridian Altitude above the Pole or under the Pole.

14. The work of this will be as before.

Latitude by Meridian Altitude of a Planet.

15. Having got a Greenwich date in mean time, as explained in Articles 5, 6, &c., the planet's declination is taken out in the same manner as the sun's, and table of *prop. log.* In correcting the planet's altitude for refraction and parallax; first correct for refraction, as for a fixed star, table (*n*,)

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[*] In the Nautical Almanac for 1833, the moon's declination is put down for every *third* hour. The rule for this year will be to put down the moon's declination for the hour preceding the Greenwich date, and that for the hour succeeding the Greenwich date: and to the *prop. log.* of the diff. or sum to add the *prop. log.* of what the Greenwich date is above the first-mentioned hour. The sum will be the *prop. log.* of the part required.

and then add parallax; the hor. par. of the planet being previously taken from the Nautical Almanac.

Latitude by Altitude of Pole Star.

16. A Greenwich date in mean time being got, as explained in Art. 5, 6, proceed, as explained in Art. 8, to find the Right Ascension of the meridian, with which enter table of correction for pole star as heretofore. The other part of the computation will be as usual.

Latitude by Double Altitude.

17. If the sun be twice observed, the computation will be the same as before, with the exception, that a Greenwich date may be got in *mean time* as directed in Art. 5, 6, and the sun's declination be found for that date from page II. of each month of the new Nautical Almanac.

When the moon is observed, its declination must be taken out as explained in Art. 13.

(To be continued.)

FRENCH CHRONOMETERS.

The following Translation of a Notice published by the Depôt de la Marine at Paris, announces a determination to establish a method for supplying the French Royal Navy with Chronometers. We have taken it from the *Astronomische Nachrichten*, into which it was copied from the *Moniteur*.

THERE shall be established a Competition every year for the supply of Chronometers required for the service of vessels of the State.

This competition will be conducted by a commission, consisting of naval engineer officers, over which the director-general of the depôt shall preside.

It will be opened on the 1st of June, and will continue from six to seven months, during which the chronometers presented will undergo various trials, which are here detailed.

Every chronometer presented to the collection will be first sent on trial to the Depôt de la Marine for one month.

After this first trial, the commission will decide which chronometers shall undergo further trial.

Those chronometers which are chosen shall be sent to the naval observatory at Brest, where they will remain for a month, submitted to the examination of the director of that observatory, who will send to the committee tables of their rates.

They will then be sent on board the (Vaisseau-ecole) college-vessel, moored in the road, and will remain either on board this vessel or on board the corvette of instruction for two months, during which they will be proved in every way. Care will be taken, that an exact register be kept of every circumstance which may alter their rates. The register of this, and the table of the rates of all the chronometers, will be sent to the committee at the end of two months, and the chronometers will be returned to the observatory at Brest, where they will again undergo a month's trial; after which they will be sent to Paris, with the tables of their rates.

At the Depôt de la Marine they will undergo a further examination of one month, when the committee will decide on those which shall be reserved for the service of the navy. Their decision will be made public.

The necessity of subjecting chronometers to the least possible motion renders it necessary to prescribe the condition, that all presented should wind up on the face (se monter par dessus.) It will be likewise as well that the movement *b*[*] may be stopped by a particular mechanism, in order that they may be set going after the carriage, without its being necessary to give them a circular movement, which is always dangerous. This last arrangement will not, however, be indispensable.

The durability of chronometers being one of the most essential advantages to be desired, all parts of them susceptible of injury by friction should be jewelled; but as the verification of this cannot be made without taking the chronometer to pieces, an assertion to that effect, in writing, by the artist, when he deposits his chronometer for competition, will be sufficient—the committee reserving the power of making, in the presence of the artist, every verification to this effect which they may consider necessary.

If it be found by the report of the commission that the number of chronometers declared admissible be greater than the funds destined for the purpose will purchase, the proprietors of those which cannot be taken may present them the following year, and they will be excused undergoing a second examination on board, by keeping them constantly going at Paris, and being accessible to the committee, who will satisfy themselves, from time to time, of their condition. The regularity of their rates will be then still more satisfactory than the first time.

If, during the course of these trials, an accident happen to a chronometer, which cannot be attributed to the bad construction of the machine, the maker will be entitled to an indemnity, the amount of which will be determined by the committee, according to the supposed value of the chronometer, if it be entirely destroyed, or according to the price of the repair, if it should have received damage only. 2474 francs (£103) will be allowed for chronometers admitted. This price, however, being susceptible of change, will be specified at the announcement of the competition each year.

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[*] Something appears to be referred to here which was not given.

PORT WILLIAM AT REDCAR.

To the Editor of the Nautical Magazine.

Stockton-on-Tees, 11th March, 1833.

SIR,

I AM highly gratified by the favourable notices which the harbour projected by me at Redcar has received from you, in Nos. 12 and 13 of the Nautical Magazine, and am thus encouraged to forward to you a few observations on the great natural advantages afforded by the half-tide rocks opposite that delightful watering-place. My first shall be directed to a comparison between the quantity of stone required to form the eastern breakwater of the proposed harbour, and that requisite for the *completion* of its north and south sides.

Thus, taking as data, that the ordinary spring-tides rise 16 feet, and that the breakwater or rubble piers, where exposed to the greatest weight of sea, are to be raised 12 feet above the high-water mark, to have a surface-breadth of 30 feet, with side slopes of four horizontal to one perpendicular foot seaward, and one-and-a-half horizontal to one perpendicular foot within the harbour, there will then be in the breakwater, if made of those proportions, a sectional area of 10991 square feet, where the depth of water at low water will be 30 feet, as in the line of part of the eastern breakwater. On the north and south sides of the harbour, where the half-tide rocks are made available, the sectional area of the rubble pier, with the same slopes, amounts to only 1700 square feet. It is only by such statements that a correct impression can be formed of the immense quantity of material, and consequent expense, which will be saved by being able to make the natural half-tide rocks available towards forming the north and south sides of the harbour, without the existence of which, the planning of a harbour, upon the magnificent scale of Port William, would be to design a work which would never be carried into execution, from the difficulty of getting funds to meet the expense. Although the area of Port William is 435 acres, and that of Kingstown harbour is only 280 acres, I am ready to prove that the completion of the former may be effected at less than one half the outlay which the latter has cost, arising from the breakwaters, or piers, which form that useful and magnificent asylum harbour, having necessarily been made for their entire length in deep water. The same want of natural advantages caused the immense expense of the Plymouth and Cherbourg breakwaters. At Redcar, however, nature has formed the greater and most difficult part of the enclosures. An inexhaustible supply of free-stone is to be found in the quarries at Upleatham, situated about three miles from the harbour, the intervening country presenting every facility for the formation of an advantageous line of railway and inclined planes for the descent of the material.

Having reason to believe that comparisons may be made between the price paid per ton for the work at Kingstown harbour and that which I have acted upon in my estimate for the works at Port William, I beg to remark, that, although the material used at Kingstown is granite, (the expense of quarrying which is above double that of free-stone,) I have, nevertheless, rated in my report the average price of the free-stone works to be executed at Redcar, at the same price as the granite works of Kingstown harbour. In every way, I have given the outside estimate, fearing that the magnitude of the undertaking, when compared with other smaller but more expensive works, if accompanied at first with a lower estimate than has hitherto accompanied such projects, on account of the absence of natural advantages to diminish their cost, would induce parties not to give the matter a fair and patient inquiry.

I am fully prepared to meet any inquiries as to the work being capable of execution within my estimate, by producing offers of contract to complete it at one-third below it, or to do the work at 2*s.* per ton, in lieu of at the rate of *three shillings per ton, which my original estimate amounted to, including the allowance for contingences.*

At this reduced rate of two shillings, the cost of the rubble breakwater, the larger harbour, of 435 acres, will be completed for 316,266*l.* 4*s.* and the smaller harbour, of 320 acres, for 210,700*l.* 12*s.*; the cost of which is small indeed, in comparison to the magnitude and utility of the harbour, whether projected for a first-rate naval station, or a general asylum harbour.

An interesting geological description of the rocks at Redcar is given by the Rev. —— Young, in his History of Cleveland, as follows—

"Detached from Huntcliff, at the distance of about five miles, are the Redcar Rocks, a large group of shelving beds, covered by the sea at high-water, and very dangerous to mariners. They belong, as has been already stated, to the lowest shale; and, as they are more northerly than the fort of Huntcliff, they are a lower part of the series. Their separation from Huntcliff, however, has been occasioned, not by a mere washing away of the strata, but by some terrible convulsion; for, instead of dipping to the south, like the strata at Saltburn, they dip rapidly to the west and northwest, presenting their broken edges to the east and south-east, in a long succession of parallel lines. These rocks are named the Salt Scars." In a former extract from Dr. Young's work, but which I have mislaid, that gentleman gives it as his opinion, that the alum-shale strata, east of Redcar, including Huntcliff, has sunk down.

The foregoing account is borne out by the soundings in the bay, between the rocks at Huntcliff and Redcar: a deep alluvium, apparently the debris of the upper part of the alum shale formation, being found in place of the submarine cliffs which skirt the bases of the alum-shale rocks for many miles to the southward of Huntcliff.

The alluvial bed, here referred to, has been occasionally exposed to view near the low-water mark on the shore, by violent easterly gales stripping off the thin superstratum of sand which at this time collects into sand-hills, which serve to protect the otherwise defenceless coast.

The bay to the southward, as well as its shores, may therefore be considered in every way as desirable accompaniments to the harbour, which latter will, from its great length in an easterly direction, as completely shelter the bay, so as to make it a safe roadstead during gales from the northward, as the cliffs of Huntcliff and Redcliff will do during those from the southward. A north-westerly gale will produce little more than a slight sea on the shores of this bay.

Had not this *hospitable* shore to mariners existed, in planning the harbour I must have adopted a different arrangement of the breakwaters to form the entrance, which could not, in any other position, have allowed of the great width of 1300 feet, without compromising the security of vessels within: on the present plan, I am satisfied that it will not admit so much sea, during any wind, as an entrance, of one-third its extent, made more open to the ocean; waves always falling more direct upon the shore than the set of the wind, however great may be its inclination with the line of the coast.

I annex a transverse section* of the harbour, formed by the half-tide rocks on its north and south sides: the Salt Scar, or northernmost range, has apparently originally reposed upon the southernmost, and its separation from which must have been effected by one of those immense slips which geologists have ascertained to have occurred in many other instances; this rock is also of a softer quality than the southernmost range, which dips under it, and would, I have no doubt, be found, though at a great depth, throughout the entire width of the intervening space of 2500 feet, by boring through the superincumbent clay bed of the harbour. To this progression of the upper strata of the alum-shale rock, at Redcar, may be attributed the formation of the natural harbour.

The utility of the alum-shale rocks will not cease by the mere construction of the piers upon them. As they present great facilities for the formation of extensive docks for the repair and building of men-of-war, by excavating the docks out of the half-tide rock, which, being of a very easy nature to remove, the cost of quarrying it would very little exceed the price for procuring the free-stone for the breakwaters from the quarries at Upleatham. As a matter of course, the side-walls for the dock would be raised *a priori* upon the half-tide rocks, sufficiently high to enable the excavation, or removal of the rock, to be effected without being troubled with water; and, in giving this suggestion, the advantage of *the great rise of the spring-tides, which vary from* 16 *to* 20 *feet, (frequently the latter with a north-west wind,) should also be mentioned*, as a dock for the reception of a line-of-battle ship, with all her stores in, need not be excavated to a greater depth than eight feet below low-water spring-tides.

The above suggestion is an important one, with a view to the harbour being made a naval station. I have omitted to allude, in my report, to the good anchorage in the offing. A reference to Capt. Hewett's chart will shew that there is fine grey sand in the whole of the southern division of the Tees bay; but many masters of vessels, with whom I have conversed on the subject, state that anchors invariably bring up *blue clay*. I believe the blue clay prevails, but red clay is found in some parts, as, during one of my last visits to Redcar, one of my boatmen, who helped to trip the anchor of a vessel which had brought-up in the bay south of the proposed harbour, between the high rock and the shore, told me that red clay was attached to it.

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* Reserved to accompany the Plan.

I thank you for your suggestion to call the harbour Port William, after our most gracious Sovereign, as a more appropriate name could not be found.

I am, sir, your very obedient servant,
W. A. Brooks.

A plan of the proposed harbour of Port William will accompany our next Number, in which we shall avail ourselves of the opportunity of going further into this most desirable and important proposal.

Lieut. Drummond's Light.

To the Editor of the Nautical Magazine.

Sir—In the last number of the "Nautical Magazine," I have been gratified by perceiving that you have given some extracts from a paper of mine, on the Illumination of Light-houses, published in the Transactions of the Royal Society. In so doing, however, you have prefixed some remarks, which, while they express your regret at the delay which has occurred in the practical application of the plan proposed, seem to convey some imputation of neglect on the part of a public body, which it is my duty to say, they are very far from deserving.

The remarks to which I allude, are these:—

"It is now some time since Lieut. T. Drummond, of the Royal Engineers, "directed his attention to the method of illuminating Light-houses, with the "view of improving it. Although he succeeded in discovering the means of "producing a light unrivalled in splendour, and shewed how it might be "introduced into these establishments, we do not find that it has yet been "adopted."

On the conclusion of the experiments described in the paper alluded to, the Trinity House at once agreed to defray whatever additional expense might be incurred, in conducting a series of experiments, with a view to render the management of the light so simple, that it might be entrusted with perfect safety to the hands of the ordinary keepers of Light-houses. I undertook to perform this task at my leisure hours, but of these I have lately had but few; and although considerable progress has been made, there still remains something to be done, before that degree of simplicity is attained, which would warrant a public body in introducing this method into Light-houses, where brilliancy, however desirable, must be combined with certainty.

In addition to the extracts which you have already given, I beg that you will permit me to add another from the same paper, which I am sure must have escaped your notice, and which conveys but a just tribute to the conduct of the Trinity Corporation, with regard to this matter.

"It only remains for me to perform the agreeable task of bearing testimony "to the liberal spirit evinced by the Trinity Corporation, on this occasion, "and to the desire which they have manifested, of facilitating, by every means

" in their power, the introduction of this method of illumination into Light-
" houses. Indeed, I cannot hesitate to express my belief, that if this do not
" take place, it will arise from some insurmountable difficulties in the way of
" its practical application, and not from the want of a full and impartial trial,
" on the part of that body, to whom these establishments are entrusted."

I have only to add, that the interest which the Trinity Corporation has ever since evinced on this subject, confirms me in the opinions I then expressed.

I am, Sir, your obedient humble servant,

London, 25*th March*, 1833. T. Drummond.

It was by no means our intention to impute neglect any where, and we shall regret very much if the observation alluded to by Lieut. Drummond has been so applied. At the same time, we are glad to find that some further experiments which Lieut. Drummond, in consequence of numerous other important occupations, cannot make himself, are to be carried on by other hands, with the view of surmounting the difficulties in the way of his light being introduced into our Light-houses. We sincerely hope that these experiments may be successful, and that Lieut. Drummond may be amply rewarded for the pains which he has taken, as well as the expenses which he has incurred in this valuable discovery.

NAUTICAL MISCELLANY.

NAVAL INTELLIGENCE.

The Royal Navy in Commission.

⁂ S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

Actæon, 26—Hon. F. W. Grey, 2d Feb. at Naples.

Ætna, S. V. 6—Com. E. Belcher, at Oporto.

Alban, St. V.—Lieut. A. Kennedy, 26th Jan. arrived at Gibraltar.

Alfred, 50—Capt. R. Maunsell, 2d Feb. Napoli di Romania.

Algerine, 10—Com. Hon. J. F. F. De Roos, 13th Jan. at Rio.

Alligator, 28—Capt. G. R. Lambert, Malacca.

Arachne, 18—Com. W. G. Agar, 13th Dec. Sailed for La Guayra. 1st Jan. at Demerara.

African, St. V. — Lieutenant J. Harvey, Falmouth.

Ariadne, 28—Capt. C. Phillips, 10th Jan. at Port Royal, Jamaica.

Asia, 84—Capt. P. Richards. Flag Ship, (*i*) Tagus.

Astrea, 8—Capt. W. King, Falmouth.

Athol, *Troop Ship*—Mr. A. Karley, 29th Jan. arrived at Barbadoes.

Badger, 10—Com. G. F. Stowe, Simon's Bay, 20th Dec.

Barham, 50—Capt. H. Pigot, 2d Feb. at Napoli di Romania. Flag Ship (*e*).

Beacon, (late **Meteor**)—Com. R. Copeland, Archipelago.

Beagle, 10—Com. R. Fitz-Roy, 2d Nov. at B. Ayres. 24th Nov. at Monte Video.

Belvidera, 42—Capt. Hon. R. S. Dundas, Feb. at Tripoli.

Blanche, 46—Capt. A. Farquhar, K. H. C. B. 13th Dec. sailed. 10th Jan. at Jam.

Brisk, 3—Lieut. J. Thompson, Gold coast.

Britannia, 120—Capt. P. Rainier, Tagus.

Britomart, 10—Lieutenant H. Quin, Plymouth.

Buffalo, *Store Ship*—Mr. F. W. R. Sadler, *Master*, Chatham.

Caledonia, 120 — Captain J. Hillyar, Tagus.

Carron, St. V.—Lieut. Com. J. Duffill, Plymouth.

Castor, 36—Capt. Rt. Hon. Lord John Hay, North Sea.

Ceylon. 2.—Lieut. H. Schomberg, Malta.

Challenger, 28—Capt. C. H. Freemantle, 25th Sept. arrived at Hobart Town. Oct. Sailed for Sydney.

Champion, 18—Com. Hon. A. Duncombe, Feb. Tripoli.

Charybdis, 3 — Lieut. Com. R. B. Crawford, Gambia.

Clio, 18—Com. J. J. Onslow, 17th Nov. arr. at Rio from Pacific. 5th Dec. sailed for Falkland Islands.

Cockatrice, 6—Lieut. Com. W. L. Rees, Rio.

Cockburn, 1—Lt. Com. C. Holbrook, Kingston, Lake Ontario.

Columbia, St. V. 2—Lt. Com. R. Ede, Woolwich.

Columbine, 18—Com. O. Love, 18th Dec. arr. at Barbadoes.

Comet, St. V.—Woolwich.

Comus, 18 (late Comet)—Com. W. Hamilton, 12th March, Sailed for West Indies. 14th March put into Falmouth.

Confiance, St. V. 2—Lieut. Com. H. P. Belson, 13th March, proceeded to Falmouth.

Conway, 28—Captain Eden, Portsmouth, refitting.

Cordelia, 10—Com. C. Hotham, Feb. at Malta.

Curaçoa, 26—Capt. D. Dunn, 1st Aug. at Madras. 14th Aug. arrived at Singapore. 25th Aug. sailed for Manilla. Expected at Bombay in December.

Curlew, 10—Com. H. D. Trotter, 3d Nov. arr. at Mauritius from Ceylon.

Dee, St. V. 4—Com. R. Oliver, 30th Jan. arr. at Woolwich.

Dispatch, 18—Com. G. Daniell, 5th Jan. arrived at Havana.

Donegal, 74—Capt. J. Dick. Flag Ship. (*d*) North Sea.

Dromedary—R. Skinner, Bermuda.

Druid, 46—Capt. S. Roberts, C.B. Lisbon.

Dublin, 50—Capt. Rt. Hon. Lord J. Townsend, 13th Jan. at Rio.

Echo, St.V. 2—Lieut. Com. Otway, Oporto.

Excellent, 58—Capt. T. Hastings, Portsmouth.

Fairy, S.V. 10—Com. W. Hewett, Sheerness.

Favorite, 18—Gold coast.

Firebrand—Lieut. W. G. Buchanan, Falmouth.

Firefly, 2—Lieut. J. M'Donnel, Bahamas.

Firefly, St. V.—Lieut. T. Baldock, 9th Feb. sailed for Mediterranean.

Flamer, St. V. 6—Lieut. R. Bastard, Plymouth.

Kangaroo, 3—Lieut. T. Hickey, Bahamas. 8th Dec. at Havana.

Larne, 18, (*late Lightning*)—Com. W. S. Smith, North Sea.

Leveret, 10—Lieut. W. F. Lapidge, 18th Jan. arr. at Lisbon from Falmouth.

Lightning, St. V.—J. Allen, Woolwich.

Madagascar, 46—Capt. E. Lyons, 30th Jan. arrived at Napoli di Romania, with Otho, king of Greece.

Magicienne, 24—Capt. J. H. Plumridge, 7th Sept. arr. at Batavia from Singapore.

Magnificent, 4—Lieut. J. Paget, Port Royal.

Magpie, *Cutter*—Lieut. J. Moffat, Sheerness.

Malabar, 74—Capt. Hon. J. Percy, North Sea.

Mastiff, 6, S. V.—Lieut. T. Graves, Archipelago.

Melville, 74—Capt. H. Hart, Sept. at Madras. Flag-ship. (*h*)

Messenger, St. Transp.—Portsmouth.

Meteor, St. V.—Lieut. Symons, 5th Feb. Napoli di Romania.

Minx, 3—Lt. J. Russell, 10th Jan. at Jamaica.

Nautilus, 10—Com. Rt. Hon. Lord G. Paulett, Oporto.

Nimble, 5—Lieut. J. M. Potbury, Bermuda.

Nimrod, 20—Com. Lord E. Russell, Oporto.

North Star, 28—Capt. Lord W. Paget, 1st Jan. at Barbadoes.

Ocean, 80—Capt. S. Chambers. Flag-ship, (*a*) Sheerness.

Onyx, 10—Lieut. A. B. Howe, Plymouth.

Orestes, 18—Com. W. N. Glascock, Oporto.

Pallas, 42—Capt. W. Walpole, 30th Dec. at Barbadoes.

Pearl, 20—Com. R. Gordon, Jamaica.

Pelican, 18—Com. J. Gape, Feb. Corfu.

Pelorus, 18—Com. R. Meredith, 20th Dec. Simon's Bay.

Philomel, 10—Com. W. Smith, 25th Nov. Gibraltar.

Pickle, 5—Lieut. C. Bagot, Bahamas.

Pike, 12—Lt. A. Brooking, Plymouth.

Pincher, 5—Lt. J. Hookey, Bahamas.

Pluto, St. V.—Lieut. G. Buchanan, Bight of Benin.

Pylades, 18—Com. E. Blankley, Rio Janeiro.

Racehorse, 18—Com. F. V. Cotton, 2d Oct. sailed for Jamaica.

Rainbow, 28—Capt. Sir J. Franklin, Knt. Feb. Corfu.

Raleigh, 18—Com. A. M. Hawkins, Feb. Smyrna.

Rapid, 10—Com. C. H. Swinburne, 5th Feb. at Napoli di Romania.

Rattlesnake, 28—Capt. C. Graham, 23d Dec. sailed for Lima.

Raven, S. V. 4—Lieut. W. Arlett, Lisbon, 4th Nov.

Revenge, 78—Capt. D. H. Mackay, 17th Feb. arrived at Gibraltar.

Rhadamanthus, St. V.—Com. G. Evans, Plymouth.

Romney, *Troop Ship*—Mr. R. Brown, Cork.

Rover, 18—Com. Sir G. Young, Bart., Mediterranean.

Royalist, 10—Lieut. R. N. Williams, 7th February, arrived at Falmouth from Oporto.

St. Vincent, 120—Capt. H. F. Senhouse.

Salamander, St. V.—Com. W. F. Austin, Woolwich.

Samarang 28—Capt. C. H. Paget, 10th Oct. M. Video.

San Josef, 110—Capt. R. Curry, Plymouth, Flag-ship. (*c*)

Sapphire, 28—Capt. Hon. W. Trefusis, 14th Nov. Bay of Fundy.

Satellite, 18—Com. R. Smart, North Sea.

Savage, 10—Lieut. R. Loney, 2d March sailed for Lisbon.

Scout, 18—Com. W. Hargood, Downs.

Scylla, 18—Com. Hon. G. Grey, 5th Feb. at Napoli.

Seaflower, 4—Lieut., J. Morgan, 25th Feb. Sailed for Lisbon.

Serpent, 16—Com. Symonds, Portsmouth Station, cruizing.

Skipjack, 5—Lieut. W. Shortland, Bahamas.

Snake, 16—Com. W. Robertson, 23d Feb. Sheerness.

Sparrow, *Cutter*—Lieut. C. W. Riley, Portsmouth Station, cruizing.

Sparrowhawk, 18—Com. Currie, at Jamaica, 10th January.

Spartiate, 74—Capt. R. Tait, 25th Feb. sailed for South America, with flag of Rear Admiral Sir M. Seymour.

Speedwell, 5—Lieut. Crooke, 4th Nov. at Barbadoes.

Speedy, *Cutter*—Lieut. J. P. Roepel, Plymouth, cruizer.

Stag, 46—Captain N. Lockyer, North Sea.
Swan, 10—Lieut. J. E. Lane, North Sea.
Sylvia, 1—Lieut. T. Spark, Portsmouth Station cruizer.
Talavera, 74 — Capt. T. Brown, North Sea.
Talbot, 28—Capt. R. Dickinson, C. B. 29th Oct. Mauritius.
Trinculo, 18—Com. R. Booth, 23d Dec. left Bahia for Mauritius.
Tweed, 20—Com. A. Bertram, 1st Dec. arrived at Jamaica from Bermuda.
Tyne, 28—Capt. C. Hope, 18th Dec. left Rio for Pacific.
Undaunted, 46—Capt. E. Harvey, 18th Dec. at Cape of Good Hope.
Vernon, 50 — Capt. Sir G. A. Westphal, Knt. 18th Feb. sailed for Halifax.
Victor, 18—Com. R. Russell, 12th Dec. at Havana.
Victory, 104—Capt. C. R. Williams, Flag-ship (*b*) Portsmouth.
Viper, 6—Lieut. H. James, Plymouth.
Warspite, 76—Capt. C. Talbot, Flag-ship, (*g*) 2d March, arrived at Portsmouth, 11th, into harbour to pay off.
Winchester, 52—Capt. Hon. W. Wellesley. 13th Jan. at Jamaica, Flag-ship. (*f*)
Wolf, 18—Com. W. Hamley, August, at Penang.
Zebra, 18—Com. Rt. Hon. Lord F. C. P. Beauclerc.

Commissioned.

Jackdaw, Surveying Vessel, Chatham.
Britomart, 10—at Plymouth.

Paid off into Ordinary.

Forrester, Plymouth.

VARIETIES.

The Union, 98, has been taken to pieces at Plymouth, and her timbers stowed away. She will be rebuilt as a 74. The Forester, brigantine, and Swallow, brig, are now in the same dock. The former will merely have a temporary repair, to enable her to remain afloat until a dock shall become vacant large enough for her to undergo a complete repair. The Swallow will be re-coppered, and her general defects made good.—*Portsmouth Herald.*

H.M. steamer Rhadamanthus, Com. Evans, went out of dock at Plymouth, on the 20th of March. She has been fitted with a new hydrostatic log, said to have been invented by Admiral Hamilton. She will leave shortly for the West Indies. The experiment has never yet, we believe, been tried, of sending a steam-vessel to this station, and we are anxious to learn what may be the effects of the climate on the engines, fittings, &c.—*Portsmouth Her.*

H.M. packet-brig Calypso, 6, Lieut. R. Peyton, which sailed from Halifax for England, direct, on the 29th of January last, not having been heard of since that date, great fears are entertained for her safety. A vessel, which sailed from that port, on the 13th ult., has arrived, with an account of the Calypso having sailed thence fifteen days before.—*Portsmouth Herald.*

Orders have been received at Plymouth to take to pieces the Tigris, in progress of building at that port, and to substitute for her, on the same slip, another frigate, under the same name.—*Portsmouth Herald.*

The Dock Dues and Shipping of Liverpool.—The dock dues received in this port during the year 1832 are considerably less than those received last. The receipts up to the 24th of June, 1831, were £200,172. 13s. 4d., whilst the receipts up to the same period this year have been only £186,415. 9s. We may mention, however, that the amount received last year was £34,000 higher than that received in any previous year, so that, though there is a falling off of £13,757. 3s. 7d. in the present year, when compared with the last, there is an increase of nearly £20,000 when compared with the previous one. The cholera, and the general dulness which has existed in trade for the last six or eight months, are probably the principal causes of the falling off in the dues. It must also be remembered, that last year was one of unusual activity. The number of vessels which have entered this port during the last twelve months is 12,928, the tonnage 1,540,057; giving an increase in the number of ships of 391, and a decrease in the amount of tonnage of 52,379 tons.

The ship Barton, (belonging to Messrs. Barton, Irlam, and Higginson,) arrived from Barbadoes, at eight o'clock on Saturday evening, the 2d of March, commenced discharging on Tuesday morning, the 5th of March; discharged 565 hhds. sugar, cocoa, cotton, and wine, and sailed again on Saturday, the 9th, at 1 P.M. having been only 4½ days discharging her inward, and taking on board out her outward cargo.—*Liverpool Paper.*

The New Channel.—The Trustees of the Liverpool Docks have taken extraordinary pains to make the opening of the new channel into this port extensively known for the information of mariners. It is, consequently, now frequently used, not merely by steamers and coasting vessels, but by large ships, which, when the wind is favourable, can now enter the port long after high-water. The utility of the new channel was conspicuously shewn on Wednesday week. The packet-ship, South America, from New York, did not reach the Floating-light till quarter-ebb; the wind, however, blowing from the northward, she made for the Formby Channel, through the new cut, and came to anchor in the river at low-water! Had the new channel not been passable, she must have come to anchor inside the Floating-light, and remained there till tide-time on Thursday.—*Liverpool Paper.*

The Erin, of Liverpool, George Gale, master, was driven on the Breakwater at Plymouth, by the violence of the recent gale, on the 20th ult. The first Lieutenant of His Majesty's ship Spartiate, from the danger attending it, would not take upon himself the risk of sending a boat to the assistance of the crew, unless an officer would volunteer his services. Mr. Francis F. M. Strong, second master of the ship, immediately came forward, and his services were accepted. The boat he had charge of was the first to reach the Breakwater, when he succeeded in rescuing five persons from a watery grave; he jumped from the boat, followed by two of his boats' crew, who swam to the shore at the imminent risk of their lives; one of the men saved the second mate, who was in so great a state of exhaustion as to be senseless, and to require strenuous assistance from the medical officers on board. This is not the first or second time Mr. Strong has been instrumental in saving, by his intrepidity, the lives of persons who were in danger of being drowned. Mr Strong is the youngest of six brothers, heroes of Trafalgar, Cadiz, Algiers, and Navarino.—*Devonport Independent.*

The Erin Steam Vessel.—The fears we expressed in our last, relative to this packet, we now regret to state, are (there can be no question) fully realized—she is totally given up by every one concerned in her; she was seen, for the last time, it appears, on Wednesday evening, the 20th February, the day of the gale, the crew and passengers being then in the rigging, shrieking and crying for relief; but from the dreadful state of the weather, no assistance could be afforded them; no doubt she was then settling. It is reported that five cabin doors have been picked up in the Bristol Channel, apparently a portion of a steam-vessel. But as yet, as far as we can hear, nothing has been discovered which can, of a certainty, be said to have belonged to her. The presumption is, that being waterlogged, and otherwise damaged, she became unmanageable—her engines stopped, and not being able to run before the wind, she became a log on the water, and foundered, it is probable, not far from Lundy Island, near which spot she was last seen.

The paragraph which appeared in our contemporary, and was afterwards copied into the London papers, that the vessel had made Milford, and that her passengers and crew were safe, was incorrect.

There is not the most remote chance, that any one on board escaped the ravages of the storm. We have scarcely ever had to detail a more distressing circumstance than the loss of this fine vessel; she left this port in beautiful weather, with a most valuable cargo, and nearly fifty souls on board; in a few short hours not a vestige of her was to be seen, nor one life spared to tell the deplorable tale — the harrowing distress which they must have experienced.—*Plymouth Herald.*

An order has been issued by the Commissioners of Customs, directing that the same privilege previously granted to Cowes and Falmouth, under the 52d of 6th Geo. IV., cap. 107, relating to vessels laden with tobacco, and which could not hitherto come into port to refit, or for orders, be extended to Portsmouth. Heretofore, vessels thus laden have been obliged to proceed to Cowes.—*Hants Tel.*

The Grand Seignior has presented Captain Charles Hotham, of H.M.S. Cordelia, with a splendid sword, as a mark of his Highness's approbation of some recent services.—*Hants Tel.*

M. ARAGO ON COMETS.

(Continued from p. 443, Vol. I.)

PLINY tells us, that in the time of Hipparchus, (about 2000 years ago,) a star suddenly appeared in the north. It was in fact this star that suggested to the great astronomer of Alexandria the idea of a catalogue, for which the science is so much indebted to him, and which has been preserved to us by Ptolemy.

A similar phenomenon reappeared in 1572, and in 1604.

The *new star* of 1572 appeared on the 8th of November *to the northward* in the Constellation Cassiope. It was more brilliant than Sirius, the brightest star known, and shone with nearly as much splendour as Venus. When the pupils of Kepler saw the other on the 38th Sept. to the south in Serpentarius, it surpassed Jupiter in brilliancy, although in the night before it had appeared very small. At the expiration of sixteen months there was no trace of it. The new star in Cassiope was also visible during nearly a year and a half.

The fixed stars are in reality Suns, round which, in all probability, planets and comets revolve. The facts which have been cited prove, that, independently of luminous stars in the infinity of celestial space, there are others void of light. Newton believed that these stars become re-illuminated, and regained their light suddenly, when comets, by falling on them, furnished them with a new source of it.

If this hypothesis be adopted, it would appear, that within the limits of history, comets would have fallen three times, if not into the Sun, replenishing our system, at least into Suns of more distant systems, round which other planets and comets perform their revolutions.

The great name of Newton ought not to prevent me from observing, that the comparison of the re-illuminating of celestial bodies to ordinary fire, that the assimilation of comets to the fuel which we heap on our hearths to keep up the combustion, does not rest on any specious analogy. Every one knows, at the present day, that all matter, in certain conditions, and particularly in certain states of electricity, may become luminous without the combination of any other matter, or without any loss of its own. Such is the case, for example, with two carbons placed in a vacuum, one of which is connected with the conductor from one of the poles of a tolerably powerful Voltaic battery, whilst the other communicates with the opposite pole of the same battery: for as soon as the surfaces of these carbons receive the electric fluid, they will become more splendidly illuminated than any fire can make them. The splendour of this light is such, that one is induced to distinguish it by the name of the *solar light*.

The fact above mentioned is one of great importance. I shall not assent, nevertheless, that the conclusion may be made from it, that the sun and the stars shine with an electric light; but it will be conceded to me, at least, that the contrary has not been proved, and hence that we should reject, in the field of simple hypothesis, the reasoning which Newton employed to establish that comets had fallen into stars.

Note.—The opinion that comets serve to replenish the sun and stars, is not confined to the celebrated *Principia:* I have also found it in a paper which appeared after the death of Newton, in the recital of a conversation which that great man once had with his nephew, Mr. Conduit, when he was 83 years of age. The following are passages of it.

"I cannot say when the comet of 1680 will fall into the sun; it may do so in five or six more revolutions; but whenever that time may arrive, the comet will so much increase the solar heat, that our globe will be burnt and every thing thereon will perish.

The new stars observed by Hipparchus, Tycho and Kepler, should have proceeded from a cause of this kind, for the extraordinary brilliancy with which they appeared cannot be otherwise explained." M. Conduit having demanded of Newton why, in his immortal work, admitting that comets might fall into the sun, he had not spoken of the vast combustion they would produce in the same manner as in the stars. "Because," replied the illustrious sage, "the conflagrations of the sun concern us rather more closely. As to the rest," he added, smiling, "I have said sufficient for the world to be acquainted with my opinion."

PROMOTIONS AND APPOINTMENTS.

Promotions.

Captain—T. Carew.

Commander—J. T. Warren; W. T. Molyneux.

Ret. Com.—A. Fairbairn.

Lieutenants—J. Hutchinson; J. W. Morgan; R. W. Otway; T. V. Anson; J. Tyssen.

Surgeon—P. Martyn.

Appointments.

Asia, 84—*Surg.* T. Galloway; *Carpr.* A. Askcroft.

Coast Guard—*Lieuts.* C. Moss, *Port; Love*; J. Else, *Conger.;* E. Harvey; C. H. Marshall; J. H. Weller.

Dee, St.V.—*Assist. Surg.* J. Clark.

Espoir, 10—*Boatsw.* R. Rogers.

Fairy, *Surv. Ves.*—*Mate* J. Madden.

Hyacinth, 18—*Lieut.* W. Dickey; *Boatsw.* W. Weeks.

Jackdaw, *Surv. Ves.*—*Assist. Surg.* J. Burn.

Melville, 74—*Lieuts.* B. J. Wilson; T. Hope, (*b*).

Ordinary—*Plym.*, *Lieut.* W. Broadwater. *Ports.; Com.* C. Cumby; *Lieuts.* E. W. Pitt; R. Dwyer.

St. Vincent, 120—*Carpr.* J. Andrews.

Salamander, *St. V.*—*Assist. Surg.* J. Peters.

Snake, 16—*Lieut.* F. Liardet.

Talavera, 74—*Cap. Mar.* D. Morley; *Lieuts.* J. J. Backhouse; G. B. Payne.

Tyrian, *Packet*—*Assist.Surg.* C.F. Knabbe.

Victory, 104—*Mast. Assist.* J. Brickwell; J. T. Duffell; *Schoolm.* J. Steel.

Warspite, 76—*Lieut.* J. Tyssen.

Marines.

Ports. Divis.—*2d Lieut.* C. J. Hatfield.

Mr. Charles Maggs, late Boatswain at Gibraltar, is appointed Boatswain of the Dockyard at the Cape of Good Hope.

NEW MERCHANT VESSELS. FROM LLOYD'S REGISTER FOR 1833.

Reported to 20th March.				*Reported to 20th March.*			
VESSELS.	RIG.	WHERE BUILT	TONS.	VESSELS.	RIG.	WHERE BUILT	TONS.
Adrian	Barque	Yarmouth	213	Hebe	Brig	Dumbarton	184
Asia	Ship	Gainsbro'	418	James Ray	Brig	Maryport	233
Claremont	Brig	Shields	265	New Grove	Barque	Shields	395
Claudine	Brig	Yarmouth	193	Stranger	Sloop	Shaldon	35
Columbus	Sloop	London	27	Veitch	Schooner	Leith	104
Dart	Schooner	Dartmouth	91	Walter Johnson	Schooner	Portmattock	66
Dart	Brig	London	178	Water Witch	Brig	Maryport	244
Fergus	Ship	Glasgow	429	William Ash	Brig	Sunderland	253
Francis Griffiths	Schooner	Norwich	77				

WRECKS.

Our table of wrecks displays a sad picture of the melancholy effects produced by the late gales, which appear to have been felt throughout Europe. Several vessels, the names of which are unknown, are entered in the Table, as there is reason to believe that they were British; and we have noted twenty-seven others which have foundered at sea, unknown to what country they belong. Of the extent of damage sustained by British shipping on our own coasts, it would be difficult to arrive at any correct statement. We fear that the losses of anchors and cables, rudders and spars, will have fallen to the lot of some hundreds. Independently of the numerous vessels which have been wrecked, many have been driven on shore by the fury of the wind and sea, and have thus sustained serious injury in their hulls. The loss of life has unhappily been proportionably great.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1833.

Continued from page 174.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
165 Abeona	Smith	Milford	—	LulworthCve	20 Feb.	6823
166 Adventurer	—	Halifax	Yarmouth, N.S.	Mud Island	Dec.	6826
167 Amity	Williams	Llanelly	—	Off Mumbles	20 Feb.	6824 Cw. drowned
168 Ann	Smith	StJohn' N B	Liverpool	Gr. Manan	Feb.	6281
169 Anne	Mills	Yarmouth	London	Colne	10 Mar.	6828 Crew saved.
170 Ardent	Jones	Cardiff	Liverpool	Near Aberstwth.	20 Feb.	6824
171 Betsey	Roper	—	—	Dublin	19 Feb.	6824 Crew saved.
172 Braddyl	—	—	—	Lancashire	Feb.	6825 Total.
173 Brothers	Spittall	—	Liverpool	Aracati	1832	6822 Ct. of Brazil
174 Brothers	—	Whitby	Shields	Berwick	21 Feb.	6825
175 Browney	Everton	Sunderland	Hambro;	Ameland	14 Feb.	6823 Crew saved.
176 Caroline	—	Beaumaris	—	Off Milford	22 Feb.	6825 Abandoned.
177 Castlemalgyn	Lewis	Dublin	—	Fishguard	19 Feb.	6823 Total.
178 Catherine	—	Beaumaris	—	Off Crew Pn.	20 Feb.	6824 Abandoned.
179 Catherine	Carstairs	Demerara	Liverpool	St David'sHd	20 Feb.	6824 Mete drownd.
180 Compact	George	Cork	—	Off Cork	20 Feb.	6824 Crew saved.
181 Crescent	Pearce	Exeter	Newcastle	Boulogne	20 Feb.	6281 Crew saved.
182 Dart	Drew	—	—	Catwater	19 Feb.	6823
183 Dart	Grills	Gibraltar	Cadiz	Cabrito Pt.	Jan.	6822 Crew saved.
184 Dan. O'Connel	—	Kilrush	—	Coast Ireland	18 Feb.	6824 Crew saved.
185 Draper	—	Waterford	London	Muslich	20 Feb.	6823
186 Eclipse	—	Pugwash	London	C. Breton	Dec.	6824
187 Eliza	Turner	—	—	C. Wales	22 Feb.	6825
188 Eliza	Somerville	Liverpool	Bissao	Bourbon	Nov.	6823 Burnt, cw. sd.
189 Eliza	—	Cardigan	—	Nr Fishguard	20 Feb.	6824 All lost.
190 Elizabeth	—	Ringsend	—	Balbriggen	18 Feb.	6824 Crw. drowned
191 Elizabeth	Banks	Waterford	Newhaven	At Sea	9March	6828 Abandoned.
192 Eliz Gillespie	—	Galway	—	Liverpool	2March	6826 On Northbnk
193 Endeavour	Milne	Bristol	Leith	Cambletown	1March	6828 Suk. with two-thirds of car.
194 Erin	—	Liverpool	Savana	Plym Brkwtr	19 Feb.	6823 Crew saved.
195 Erin	St. Vessel	—	—	Bristol Chan.	20 Feb.	Sup. Foundered.
196 Eugene	Mitchell	Mauritius	—	Madagascar	12 Oct.	6828 Crew saved.
197 Evelina Jane	—	—	—	Near Bude	21 Feb.	6824 All lost.
198 Favorite	Young	Bristol	Laugharne	Port Eynon	2March	6826
199 Felicity	Foster	Liverpool	Savana	At Sea	?	6828 Sup. foundrd.
200 Felicity	—	Bristol	—	Dartmouth	26 Feb.	6285
201 Fidelity	Dove	—	—	Yarmtb. I. W.	15 Feb.	6282 Drve. ag. quay
202 Fly	Sloop	—	—	NearMairgan	20 Feb.	Capsized.
203 Frances Ann	Treblecock	Swansea;	Glocester	Swansea Bay	20 Feb.	6824 Crw. drowned
204 Frederick	Nagle	Liverpool	Africa	Off StDavid's Head	21 Feb.	6824 Crw. drowned.
205 Freedom	—	Newport	Cork	Near Milford	20 Feb.	6824 4 drowned.
206 Freeman	Lawson	Maryport	Annan	Mowbray Sds	4 Feb.	6821
207 Friends	Williams	Newport	Liverpool	Northbank	19 Feb.	6823 Liverpool 3 dr.
208 George	Redfern	Whitehavn.	Dublin	Holyhead	20 Feb.	6823 Full of water, crew saved.
209 Good Statesman	Buckinghm	Hagle	Swansea	St. Ives	7March	6828 Cw. sd. struck a wreck.
210 HaduorHouse	Nellis	(Founderd)	—	Off Dudgeon	14 Feb.	6823 Run foul of.
211 Hannah	Bridgeon	Newry	London	Off Portland	22 Feb.	6824 Run d. cw. sd.
212 Harriette	Sillis	Yarmouth	Liverpool	Ramsgate	21 Feb	6823 Crew saved.
213 Hawk	Hall	Wexford	—	Wexford	22 Feb.	6824 Crew saved.
214 Henry	Pentland	Ard Glass	—	Balbriggen	Feb	6825
215 Helena	Gibson	Glasgow	Limerick	Westport	1March	6828 Crew saved.
216 HighlandLad	—	Terranova	Falmouth	Mazzara	Jan.	6822 Mediterran.
217 Huddleston	Leake	Stockton	Bridlington	Off Whitby	11 Feb.	6281 Crew saved.
218 Hurrell	Rider	Plymouth	St. Michaels	Off Ushant	19 Feb.	6824 Crew saved.
219 Industry	Randel	Terceira	—	Off Hol. Hd.	28 Feb	6826 Run foul of.
220 Isabella	Wildgoos	London	Demerara	Nr. Pevensey	20 Feb.	6823 Crw. &c. sd.
221 Jane	—	Greenock	—	Rathlin I.	19 Feb.	6824 Totally lost.
222 Jane & Ann	—	Mostyn	Carnarvon	Lavan Sands	19 Feb.	6823 Total, Beaumaris
223 Joseph and Mary	Somers	Youghal	London	Not heard of	since	28 Nov. 6281
224 Kent	Alderson	London	Newport	Near Bude	20 Feb.	6824 Crew saved.
225 Lady Florence	—	Drogheda	—	Nr. Limerick	18 Feb.	6824 Crew saved.
226 Levin	—	Dublin	—	Near Dublin	20 Feb.	6824 Scut. on rocks
227 Malvina	Cholwick	—	Gibraltar	Newport	21 Feb.	6823 Snk. crew sd
228 Martha	—	Whitehavn.	Dublin	Holyhead	20 Feb.	6823 Crew saved.
229 Maria	Irwin	Swansea	Ilfracombe	Bristol chan.	20 Feb.	6824 Crew drownd.
230 Mary	Lewis	Bristol	Laugharne	Port Eynon	2March	6826
231 Mary	Of London	Towed on	shore by	Conway	1March	6826

VESSELS' NAMES.	MASTERS' NALES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
232 Mary Ann	Schooner	Foundered		Off Padstow	20 Feb.	6823 All drowned.
233 Mary Ann	Legget	St Domingo		West Hoyle	20 Feb.	6824 Five drowned
234 Meredith	Fullerton	Liverpool	N. Zealand	Hokianga R.	13 July	6281 Boatsw.drwd.
235 Minerva		Liverpool	Belfast	Off Howth	20 Feb.	6824 Abandoned.
236 Neptune	Davis	Gloucester	Portsmouth	Cardiff	12 Feb.	6821
237 Northumberland	Wilden			Rio Grande	23 Oct.	6824 Crew saved.
238 Packet of Ayr	Paton			Nr Peel Light	11 Feb.	6822 J. Walmey.
239 Pallion	Johuson	Sunderland	London	Coast Suffolk	20 Feb	6823 Crew saved.
240 Pembroke		Milford	Dundalk	Demany Pt.	20 Feb.	6824 Master sd.only
241 Phœnix	James	Cardigan		Inch Island	20 Feb.	6824 Crew saved.
242 Prince of SaxeCobourg		Hastings		OffDartmo'th	18 Feb.	6282 Run dn. cw.sd
243 Prosperous				Mixen R.	20 Feb.	6823 Laden w. oats.
244 Providence	Campbell	London	Bombay	Scilly	16 Feb.	6281 ?
245 Queen Elizabeth	Athworth	Waterford	London	Near Bude	20 Feb.	6824 Crew saved.
246 Resolution	Evans	Cardiff	Liverpool	Mort Bay	20 Feb.	6824 Master sd.only
247 Sarah		Whitehavn		Near Douglas	29 Feb.	6824 Eight drownd
248 Seanhoughs	Armstrong	Workingtn.		Holyhead	20 Feb.	6823 Crew saved.
249 St. Peter	Fearon	Harrington	Drogheda	Skerries	20 Feb.	6824 Crw.drowned
250 Surprize	Brand	Clovely		Off Mumbles	20 Feb.	6824 Crew saved.
251 Susanna and Jane		Portland		Off Wexford	1 Feb.	6281 On Blackwater Bank.
252 Tay	Farrell	London	Hull	Corton Sand	20 Feb.	6823 Two drowned
253 Thetis		Ostend	Bordeaux	French Coast	9 Feb.	—— Total.
254 Thomas	Nichols	Bury	Scilly	St. Mary's	23 Feb.	6825
255 Three Sisters	Pavey	Portcawl	Waterford	Swansea	26 Feb.	6825 Crew saved.
256 Triton	How	London		coast Durham	13 Feb.	6822 Run foul of.
257 Trusty	Day			Newton	22 Feb.	6825 2 cw.drowned
258 Turtle Dove	Davis		Gloucester	Dublin Bay	25 Feb.	6825
259 Two Brothers	Supposed			Christch. Ldg	20 Feb.	6823
260 Union	Schooner	Truro	Wales	N. St. Ives	Feb	—— Crew saved.
261 Union	Kirby	Sunderland	Chatham	Gunfleet S.	14 Feb.	6281 Crew saved.
262 Unknown	A sloop	Capsized & Supposed to	foundered be Fly of	Off Padstow Dartmouth	20 Feb.	6823 All drowned.
263 Unknown	A sloop			Off Christch.	17 Feb.	6282 About 50 tons.
264 Unknown	A brig	200 tons		Rundle Stone	11 Mar.	6828
265 Unknown	Brig	London	Sunderland	Holy Island	22 Feb.	6825 Crew saved.
266 Unknown				Crow Rock	19 Feb.	6823
267 Unknown	A brig			Near Bude	20 Feb.	6823
268 Unknown				Wicklow Hd.	16 Feb.	6823
269 Unknown			Dundee	Elbow Bank	8 Feb.	6822 Coal laden.
270 Valentine		London		Yarmouth	20 Feb.	6823
271 William and Mary	Sloop			Cst. Scotland	20 Feb.	6824 Abandoned.
272 WilliamPenn		Savana		East Hoyle	20 Feb.	6824 Crew saved.

In addition to the foregoing Table, we have collected a few of the particulars relating to some mentioned therein.

The Neptune.—Driven on Cardiff Sands, 10th Feb. Taken into Cardiff roads afterwards, with loss of rudder, and sunk in the mud.

Freeman.—Capsized as the tide made, and sunk.

Huddleston.—Foundered during a gale. Crew landed at Flansborough, by a Whitby brig.

Providence Camp.—Driven from her anchors on Crow Bar, St. Mary's Road; scuttled on the bar, 21st Feb.: fears for the vessel's back being broken. Cargo discharging.

Harriette Sillis.—In running for Ramsgate, with pumps choked, and leaky, struck the Pier, and filled on the west bank.

Isabella Wildgoos.—On the Boulder bank 4 hours; then drove ashore at Wallsend. Crew and Passengers saved, cargo pt. lost.

Erin.—In running for Plymouth, was unmanageable, from being water-logged. Struck on the east end of the break-water, and was totally wrecked; crew saved by boats of H. M. S. Rover.

Malvina.—Sprung a leak, and sunk in Newport. About 50 tons of iron saved.

Friends, Williams.—Struck on the spit of the North bank, Liverpool, and went down, off the edge of the bank. Master and two men drowned, remainder saved.

Tay, Farrel.—Was driven on Corton Sand, off Yarmouth, and quickly disappeared. Master and mate took the boat and were drowned; the crew saved by the life-boat.

Eliza, Somerville.—Burnt by the natives.

Hurrell, Rider.—Dismasted and thrown on her beam-ends.

Compact, George.—In attempting to enter Cork harbour, struck outside, and in four hours scarcely a vestige of her remained.

Surprize, Brand.—A Smack. Off Lundy, in a gale, sprung a leak. Bore up, and kept free till off Mumbles, where she sunk. The crew and passenger took to the little boat, (ten feet long,) and left the vessel as she was sinking. They had to struggle with the tempest about an hour, when Captain Williams, of the Good Intent, seeing their perilous situation, bore down, and rescued them from a watery grave.

Maria, Irwin.—Unable to make Swansea, obliged to make for Porthcawl. Got on shore at the back of the pier. Crew perished.

Francis Ann.—Foundered at her moorings in Swansea Bay. Crew, consisting of six men and four passengers, all perished.

Freedom, a schooner, coal laden.—One man saved.

Frederic, of Liverpool.—Sunk in deep water. All lost.

Castlemalgwyn.—Drifted from Fishguard Pier, and went to pieces on the rocks.

Betsey, Roper.—Went to pieces off the platform of the Light-house.

Phœnix, James.—Struck on the bar, and sprung a leak.

Union, schooner, with copper ore.—Foundered off Zennor, about two leagues west of St. Ives, from having sprung a leak. The crew, four, took the boat, and drove before the wind and sea. They were exposed thus for seventeen hours, and made the shore at St. Agnes, and, with assistance, landed in safety.

St. Peter.—Lost in sight of the shore. Some fishermen who had attempted to save the crew nearly lost their lives. The crew perished.

VESSELS DETAINED BY ACCIDENTS, &C.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE DETAINED.	WHEN.	PARTICULARS.
Eagle	Lyon	Liverpool	New York	Sandy Hook	31 Jan.	6826 On shore.
Elizabeth	Donald	Launceston	London	Bay of Islands	Oct.	6281 Leaky, cargo damaged.
General Foy	Goderuil	—	—	Acklin's Isl.	7 Dec.	6281 On shore.

VESSELS SPOKEN AT SEA.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE SPOKEN.	WHEN	PARTICULARS.
Dalmatia	—	Liverpool	New York	44° N 25° W	28 Feb.	6828
Enchantress	Roxburgh	London	Sydney	4 N 22 W	7 Feb.	6281
Margaret	—	Liverpool	Havana	31 N 60 W	14 Feb.	6828
Matilda	—	London	Peru	52 S 69 W	21 Nov.	6823
Susan	Nicholson	Newport	Philadelph.	39 N 71 W	27 Jan.	6826 Out 117 days.

A Court Martial assembled on Monday, at the Royal Marine Mess-room, in this garrison,—President, Lieut-Col. George Lewis, C.B. R.M.; Members, Lieut.-Col. Edward Hornby, R.M.; Major Peter Jones, R.M.; Major J. Jones, 12th Regiment; Capt. E. St. Maur, 51st Regiment; Capt. P. Robertson, R.M.; Capt. D. A. Gibsone, R.M.; Capt. Wm. Moorshead, 7th Royal Fusileers; Capt. Fitz M. Wm. Colthurst, 12th Regiment; First-Lieut. Joseph Luddington, R.M.; First-Lieut. Jas. Finmore, R.M.; Lieut. M. R. S. Whitmore, 7th Royal Fusileers; and Ensign H. Hopwood, 51st Regiment,—to try Lieut. Edward Parke, of the Royal Marines, on the following charges, preferred against him by Lieut. Fred. Patten, of H.M.S. Briton:—First, For being the bearer of a challenge to Lieut. Patten from Second-Lieut. Lamont, R.M. belonging to H.M.S. Briton, on or about the 21st of January, 1833.—Second, For making use of most disgusting, indecent, and ungentlemanly language, before the young midshipmen, in in the larboard berth of H.M.S. Briton, on or about the 21st of January, 1833.—Third, For speaking of Lieut. Patten in a most disgraceful, disrespectful, ungentlemanly, and unofficer-like manner, tending to defame his character, on or about the 24th of January, 1833, in the starboard berth of H.M.S. Briton.

The verdict of the Court Martial on Second-Lieut. Parke, of the Royal Marines, was "guilty on the first and second charges, and not guilty on the third." And the sentence of the Court was, that he be cashiered. The sentence has been approved by the Lords' Commissioners of the Admirality, and confirmed by the King.—*Hampshire Telegraph.*

A Court-Martial was held on Thursday, the 7th March, on board His Majesty's ship San Josef, in Hamoaze, for the trial of Lieut. James Fox Campbell, of His Majesty's sloop Comus, Commander Hamilton, on the undermentioned charge:—

" For having, on the 27th Feb. last, disobeyed the orders of Lieut. Thomas Peter Dobree, his superior officer, in not returning on board, to his leave, he being on shore when he was aware of the sloop going out of harbour."

The Court was composed of Admiral Sir Manley Dixon, K.C.B. President; Capt. R. Currie, C.B,; Capt. Ross, C.B.; Commander R. Oliver (b); and Commander H. T. Austin;—G. Eastlake, Esq. Judge Advocate.

The Judge Advocate said, the Court had determined that the charge had been proved, and they adjudged that the said Lieut. C. J. F. Campbell, be severely reprimanded.—*Plym. Herald.*

At the meeting of the Literary and Philosophical Society, yesterday week, Mr. Fielding read an interesting paper " On the sufferings of seamen from extreme cold."

ADMIRALTY ORDER.

ADMIRALTY ORDER.

Memorandum.

"*Admiralty, 11th March*, 1833.

" With reference to the 12th article of the Regulations, dated the 24th of August, 1831, for granting Out-pensions to Greenwich Hospital, the Lords Commissioners of the Admiralty hereby give notice, that his Majesty has been graciously pleased to direct, by his Order in Council of the 6th instant, that the Captain or Commander of any of His Majesty's sea-going ships shall be at liberty to recommend any Petty Officer or Seaman, or Non-commissioned Officer or Private of Marines, for the Gratuity and Medal, on the ship he commands being paid off, notwithstanding that such ship may not have been three years in commission.

The other restrictions specified in the said article continue in force.

" By Command of their Lordships,

" GEORGE ELLIOT.

" To all Captains, Commanders, and Commanding Officers of His Majesty's Ships and Vessels."

MOVEMENTS OF TRANSPORTS.

AMPHITRITE—Lieut. W. R. Cooley, Plymouth.
ARAB—Lieut. W. C. Harris, Mauritius.
HOPE—Lieut. W. Ryder, Lisbon.
MAITLAND—Lieut. G. Sanders, Deptford.
NUMA—Lieut. W. H. Brady, 17th March sailed for Jamaica
ORESTES—Deptford.
PRINCE REGENT—Lieut. C. H. Binstead, Mediterranean.
STENTOR—Lieutenant E. B. Davison, South America.
SYLVIA—Lieut. G. N. Wesley, Deptford.
WANDERER—Lieut. A Young, Deptford.

Births.

18th Feb., the lady of Captain Whittaker, R.N., of a son.

At Notting-hill-terrace, on the 22d inst., the lady of Captain Machonochie, R.N., of a son.

At Bodmin, the lady of Capt. E. Gilbert, R.N., of a daughter.

At Woodside, the lady of Captain Thorne, R.N., of a daughter.

On the 2nd ult., at Southwold, Suffolk, the lady of Lieut. F. W. Ellis, R.N., of a son.

At Forton Lodge, near Gosport, on the 27th ult., the lady of Lieut. J. Hallowes, R.N., of a son.

On the 18th ult., at East Cowes, the lady of Lieut. Helby, R.N., of a son, still-born.

The lady of G. E. Foreman, Esq., Surgeon of his Majesty's ship Excellent, of a son.

Marriages.

John Ferrier, Esq., Admiral of the Blue, to Mrs. Leach, widow of Commander J. Leach.

Deaths.

At his house, Aimberly-place, Falmouth, aged 63, Captain J. L. Popham, R.N.

Retired Commander Silver, R.N., of Fareham, deeply lamented by his family and friends.

At Brighton, in the 77th year of his age, the Right Hon. Lord John Townshend.

At Ryde, after a long illness, Charles Inglis, Esq., Captain R.N.

In July last, at sea, on board the Egmont, which he commanded, Lieutenant James Walmsley, R.N.

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THE
NAUTICAL MAGAZINE,
&c.

MAY, 1833.

HYDROGRAPHY.

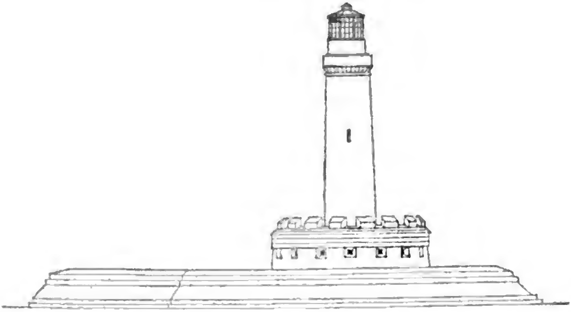
Note.—All Bearings are Magnetic, unless otherwise stated.

30.—New Light at Trieste.

Description of the New Light-house erected in 1832.

The Light-house which, by the munificence of His Majesty the Emperor Francis, has been lately erected at Trieste for the guidance of navigators, is situated on the extreme point of the Theresian mole, distant 360 feet (measure of Vienna = 113,799 metres, or 373 E. feet) from the edge of the breakers on the loose stones which protect the foundations of the mole. It is in the form of a round tower, based upon a military platform, and is constructed of calcareous stone (grey marble) brought from the neighbouring mountains of Carso in Carniola.

Sketch of the Light-house.



Its height from the level of the sea, at a mean height of tide, (a medium between the highest and lowest water,) to the centre of the luminous cone, is 106 feet of Vienna = 33,507 metres, or 106,6 E. feet. The light consists of 42 oil lamps, and will be visible at the distance of 12 geographical miles, 60 to a degree, supposing the eye of the observer to be elevated 12 feet above the level of the sea, so that it will be seen from Pirano on the side of Istria, and as far as the shoals of Grado in the vicinity of the Italian coast.

In order that this light may be distinguished from any fire or other illumination that might occasionally be visible on the heights which surround and command the roads of Trieste, the expedient of an intermittent or revolving light has been adopted,—and a machine invented for the purpose moves a dark veil, or shade, which revolves in the period of half-a-minute, alternately covering and revealing the illuminated cone.

The first time of its being regularly lighted will be the evening of the 11th of February, 1833.

Trieste, December, 1832.

31.—REMARKS ON THE WEATHER AT TREBISONDE *in November and December*, 1831, *by* R. D. MIDDLETON, *Master of the schooner Syeed Khan.*

Arrived on the 8th November. When off Cape Joros in the morning, a heavy gale from the north-west; on nearing the land, the wind gradually lulled, though appearances indicated a continuance of the gale in the offing. On reaching the anchorage at Trebisonde, very little wind. Brought up in five fathoms, with a considerable swell rolling in. Barometer on shore that day 30·08, and the day previous 30; during both of which we had experienced bad weather at sea. In the night, wind off the land; as I may observe, once for all, was the case every night during my stay at Trebisonde.

On the morning of the 9th the weather cleared up, the sea went gradually down, and for fourteen days had the finest weather imaginable—sea quite smooth, light winds all day, varying two or three points on each side of east. The land-wind at nights sometimes very fresh, especially on those nights when the weather had been finest during the day. Barometer on the 9th 30·26, on the 10th 30·37, and continuing till the afternoon of the 21st always between this and 29·94 in., never being under 30 in. except once.

On the afternoon of the 21st, appearances indicated a change. Barometer 29·98. At 8 A.M. of the 22d, barometer 29·80, a furious gale came on from the N.W.; sea at the time quite smooth. It is worthy of remark, that on this day Mr. Brants, the British consul, was among the mountains a short distance in-land, and felt not the least of the breeze, it being perfectly calm with him the whole day. The wind came in a tremendons squall, but had hardly struck the land, before its violence was sensibly checked; before it produced any considerable sea it was fast abating, and at noon a calm took place. At 1 P.M. a light air came off the land: a great swell continued rolling in that day and the following. Barometer at 4 P.M. 30.

The weather continued to the end of the month very unsettled, with a great deal of rain, and occasionally some swell—light airs of wind from all points of the compass, and a considerable part of the time perfectly calm. Barometer varying from 29·84 to 30·27. Thermometer during this period in the consul's house, on shore, generally about 55°; lowest 53½°, highest 59°.

December 1st, 2d, and 3d, tolerably fine weather, but generally dark and unsettled. Barometer 30·18, descending till the afternoon of the 3d to 29·61, when a swell came on without wind. On the 4th, in the morning, weather appeared fine, barometer 29·66, but about 1 P.M. came on suddenly to blow from the N.W. Wind almost immediately lulled on reaching the land, and soon after came directly off shore. Barometer at 4 P.M. 29·74. Rained heavily the whole night, and on the hills close down to the sea a considerable quantity of snow fell. 5th December, calm the whole day; barometer in the morning 29·94, at 4 P.M. 29·98; appearances seemed flattering for a return of fine weather, though very cloudy in the offing; calm continued all night, or trifling airs off the land; swell, which commenced in the afternoon of the 3d, continued. 6th, dark and unpleasant weather; barometer at 8 A.M. 30·14, at 4 P.M. 30·29; occasional squalls all day from N.W. with rain and cold weather; thermometer on shore 53. The wind in these squalls ceased immediately on reaching the shore, and came off the land. Heavy rain the first part of the night, and much snow fell on the hills. 7th, in the morning fine clear weather; mountains to the E. quite clear, indicating a total change of weather; wind off the land, and very cold; thermometer in the cabin 44°; barometer 30·46, and at 4 P.M. 30·33.

This weather, the finest imaginable, continues at the time of closing these remarks—10th December, 1831.

The conclusion I have been able to come to from my observation of the weather as above described, added to the information received from residents, is decidedly favourable to the safety of the anchorage of Trebisonde. From the land in the interior being exceedingly mountainous, and covered with snow, and very high land continuing down even to the shore (which description applies to the whole extent of coast along the south side of the Black Sea,) it appears that the atmosphere over the land is so considerably more dense than over the sea, that the wind will never blow upon it with any force, or will at all events abate the moment it reaches it. The only wind that causes any swell is from N.W., and, although this wind comes from the cold regions bounding the north of this sea, and was this coast of a different description, so as to be heated, the wind from this quarter would undoubtedly blow down upon it with great violence; yet the contrary being the case, these N.W. winds are checked, and lose their force on reaching the warm latitudes in the offing, and have no tendency to extend to a coast where, perhaps, within a mile or two of the shore inland, the thermometer is considerably below the freezing point. Reference to the height of the barometer will, I think, clearly prove that the state of the atmosphere has been such during the period to which my observations refer, that a gale must have been checked before reaching the shore, or immediately on its arrival there. The variation in the height of the mercury has been trifling: during the first period of bad weather, 30·8—the lowest it attained during 15 days of bad weather, from the 22d November to the 6th December, inclusive, being 29·61, (though it only reached this point for a short time, and was generally much higher,) and during the finest periods, standing from something above 30 to 30·46: thus, there being an absence of the first cause of wind, a light and rarefied atmosphere.

I consider therefore, that although the anchorages on this coast are exposed, that they are entirely free from danger; that there never is both wind and sea together; and, that although a considerable swell will occasionally roll in when the wind has blown hard out at sea, that there is no difficulty whatever in a ship riding upon any part of it. Platana is said to be better protected from the effect of a N.W. wind than Trebisonde, but I can see very little difference; they are both open as any anchorages can well be; and yet it is admittted, that, at the former place, Turkish vessels have, from time immemorial, rode in safety the whole winter; which to me is perfect proof of the safety of the whole coast, for if the wind ever blew home with any violence even for a few hours, I am convinced no ship could ride at Platana.

The following notes are copied from Captain Middleton's Chart of the Black Sea.

Southern Coast.

"The port of *Eregri* to the west of *Cape Baba* is represented as a very good port by the Turkish captains, and which they run for, if they miss the Bosphorus with northerly winds."

"The anchorage of *Amassero*, to the east of Cape Baba, appears to be a very snug one for small vessels, and about three miles to the east of it is a snug little bay, with an open beach."

"In the cliff, four or five miles to the west of *Delicligheh*, is the entrance to what is apparently an immense cavern."

"*Cape Kerempe Boroun*, is very high, and was seen distinctly at the distance of sixty miles."

"From *Cape Kerelu* to Cape Joros the land is very high and bold, covered at the mountain tops with pine trees. It appears so high and mountainous, that no high land being marked in the chart might lead the navigator to conclude, that he had overrun Trebizonde, except that the Capes form points, which cannot be mistaken for any others on the chart."

"*Platana*. This is the anchorage mostly frequented by the Turks, and is considered perfectly safe. Ships winter there, and the crews live on shore."

"At about nine miles east of Trebizonde is a little bay, called *Kooata*, with good anchorage for a small vessel that can ride in three fathoms."

"*Rizeh*, called improperly Triseh in the charts, is said to have tolerable anchorage. It is wrongly laid down generally, being thirty miles to the east of Trebizonde."

"*Batoumi* has good anchorage."

"The land that forms this point (Sinope) is very conspicuous, and *Cape Indieh*, and the land between them being low it appears like an island at a moderate distance. The town of Sinope being seen as you approach over the low isthmus that connects the peninsula forming the point with the main."

"The coast between *Gueseh* river, and the western mouth of the *Kizil Imnak* is very low, and covered with trees."

"*Samsoun* is a port greatly frequented, and said to be tolerably good. Six hundred cargoes of grain, mostly for Constantinople, it is said, were shipped here in 1831. These are cargoes of all sizes, probably many of them little more than boats. The province to the eastward along shore is very fertile."

"*Unieh* is a port where there is also a considerable trade in grain, and said to have safe anchorage between the island and the main."

"The anchorage under *Cape Vana* is said to be good."

Western Coast.

"*Current*. Running up from off *Balaban Boroun* found a current to the eastward, which set the ship over to the mouth of the Dnieper, when by account she was off Odessa."

."*Coast between the Danube and Dneister.* With the exception of a small hill on the left point of the Ghedrille mouth of the Danube (right point going in,) all the coast from the Portecktcka mouth of the Danube to the Otchaka mouth of the Dneister is low-land, with trees that may be seen five or six miles off, and before any land is visible."

"*Current south from the Danube.* From the Georghievskoi mouths of the Danube, pilots reckon a current running half a mile per hour to the Bosphorus."

"*Kara Erman.* The coast about this place is formed of elevated land."

"*Kustendge Roadstead* is bad."

"*Hadgige Boroun.* The coast may be seen twelve or fifteen miles off."

"*Cape Chabla.* There is a light-house on it, (not lighted,) which may be seen seven or eight miles off; red cliffs about eight miles to the southward of it. At the same distance to the southward of this cliff is a table mountain, which may be seen distant about twenty miles. This and the others to the north are not very high."

"*Cape Ghallegra* has a few small red houses on it."

"*Kavarna* is a good safe roadstead at all seasons, and with all winds. No danger there whatever."

"*Varna.* Anchorage not good."

"*Eminey Boroun.* The mountain named Erecle, to the north of this Cape, said to have the form of a loaf of bread, and may be seen thirty miles off. Could not see that this Cape bore any resemblance to a loaf of bread, but it is conspicuous land, and cannot well be mistaken, being prominent, and higher than all the land to the northward of it."

"*Aiolou,* in the Gulf of Bourgas, is good anchorage in all seasons, with all winds."

"*St. John's Islands,* Gulf of Bourgas. Excellent anchorage within them."

"*Cape Inada or Niada.* A good road with all winds."

"*Cape Kara Boroun,* a low Cape, black, and appears when near the shore to the eastward like an island. From this Cape to the old castle near the Bosphorus are a number of headlands very red."

"*Kara Boroun,* signifies black nose."

32.—LATITUDE *of the South Extreme of* KING'S ISLAND, *and the Position of* REID'S ROCK'S, *Bass's Strait.*

We have Captain King's authority for prolonging the southern extremity of King's Island, in Bass's Straits, to 40° 9′ S. latitude, beyond which it may still extend; and, also, for stating that Reid's Rocks, which are very extensive, are correctly placed in the Admiralty chart of Bass's Strait.

33.—LIGHTS IN THE ENTRANCE OF THE BAY OF FUNDY.

We are indebted to the kindness of the Secretary to Lloyd's, for the following communication, to which we have added the positions of some of the places, as determined lately by naval officers, under the orders of Vice-Admiral Sir Charles Ogle, Bart.

We shall be thankful to any of our readers for further particulars of the light-houses mentioned therein.

Southern Seal Island, South Extreme, Lat. 43° 23′ 51″ N., Long. 65° 59′ 42″ W.

There was a light erected in 1831, and put into operation in November of that year, upon the south point of the southern Seal Island. This light bears from Cape Sable W. b. N. 21 miles. Southward from this light, about two miles, lies a dangerous rock, upon which the sea always breaks, except with very smooth water. Between this (Blonde) rock and the light-house the ground is very shoal and rocky, and there is no safe passage for large vessels.

Light on Bryer Island, Lat. 44° 13′ 51″ N., Long. 66° 26′ 54″ W.

Ships in standing to the northward should not keep so near the Nova Scotia shore as to shut in Bryer Island light, as they will be in danger of the ledges about the Gull rock. In rounding Bryer Island, ships should keep without the distance of 3 miles, to avoid the N.W. ledge, which is dangerous at low water.

The light on Sibly Island bears from Seal Island lights N.W. b. W.

A light on Quoddy Head, America.

A light at the entrance of Head Harbour. It is intended to mark the entrance into the main channel of the St. Croix leading to the inner bay of Passamaquoddy, St. Andrew's &c., and into Head Harbour. This light is very useful to the coasting trade. (1829.)

A light to the right-hand entrance of Annapolis gut.

Light on Partridge Island, St. John's, Lat. 45° 13′ 36″ N., Long. 66° 6′ 0″ W.

The beacon light lately established within the light on Partridge island is very beneficial to the Port of St. John, as ships may now safely enter it at all hours of the night. The beacon light appears to be on the extreme of the mud at the left-hand entrance of the harbour.

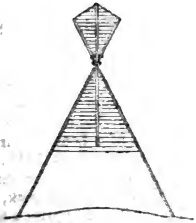
The two lights on Point Lepreau are in the same building, and are placed one above the other, distant about 18 feet, to distinguish them from the other lights. (1831.)

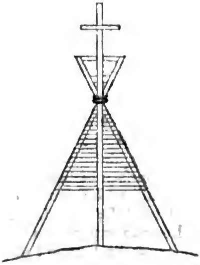
The light-houses on Machias, Seal Islands, (1832,) bear from each other, E.S.E. and W.N.W., distant 200 feet. They will be immediately distinguished from all the other lights upon the coast. When these lights are in one bearing, W.N.W. the distance from the Murr ledges will be about one mile. Vessels should then tack, or haul off to the southward. They bear from the light on Gannet rock W. b. N. ¼ N. 13′.

The Gannet rock light (1830) bears from the light on Bryer Island N.W. ½ W. 21′, and is surrounded by dangerous rocks and shoals. The old Proprietor rock, a very dangerous ledge, which dries at ¾ ebb, bears from the light E. b. N. a little N. about 7 miles distant, and St. Mary's, the southernmost of the Murr ledges, S.W. b. W. ½ W. 2′; the northernmost of these ledges bears from it N.W. b. W. ¼ W. 3 miles. Ships ought not to run for this light, for if the weather should suddenly become thick or foggy, they might get among the dangers which surround it.

34.—Description of Two Landmarks erected on the South Point of the Harbour of Memel, Baltic.

To enter the harbour of Memel when the pilots cannot go off, on account of contrary winds, heavy swell, and stormy weather, the masters of vessels have to observe the following instructions, viz.: As soon as the three beacons are to be seen, they are to be brought into a line with each other; the black and white buoys will then be discovered in the same line. As soon as the white buoy, which lies to the eastward, can be seen, steer in that direction till you come near to it, when Two Landmarks, of pyramidical form, and lathed, will be observed nearly in a line. The one to the southward is the highest, and is distinguished by a cross; the other, to the northward, is the lowest, and is distinguished by a quadrangle on the top.





As soon as the white buoy which lies to the left, or on the larboard side, is passed, the course is S.S.E. ½ E. by the compass, along the white[*] marks, which are all to be left on the larboard side; the landmarks are to be kept in a line with each other, till the three beacons are brought into a line. You then come to a red buoy, which may be passed on either side; from thence the course is S.E. by E. and S.E. till you come near the north or lower ballast quay, and consequently into the harbour.

It is further to be observed, that pilots are generally stationed near the red buoy, either in sailing or rowing boats, if the weather in any way permits it, and point out the proper course, to the east or to the west, by making signals with a flag. The red flag upon the signal beacon points in the same direction as that in the boat. When the red buoy has been passed, the signals are no longer made by the boat, but are continued by the red flag upon the signal beacon alone.

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[*] Anchored poles.

The red flag likewise denotes 15 feet water upon the bar. But if balls are exhibited upon the middle beacon, each ball to the westward signifies one foot less, to the eastward one foot more, than 15 feet water on the bar.

As the two pyramidical Landmarks cannot be struck, the old regulation continues in force, that when the two northern beacons are struck, no vessels are allowed to enter the harbour.

It is likewise advisable, that vessels in making the harbour do not carry too little sail, as in general a strong current sets out.

SCHROEDER, *Pilot-Commander.*

Memel, 6th Feb. 1833.

35.—POSITION OF THE HORMIGAS ROCKS, *on the Coast of Peru.*

The Hormigas are a very dangerous bed of rocks just awash with the surface of the water, on the coast of Peru; and, as they are still incorrectly laid down in some charts, we give the following account of their position, from the valuable observations of Mr. H. Babb, the late master of H.M.S. Alert, when on the South American Station: —

> "These rocks lie in a direction W. by N., distant 26 miles from the west point of Lorenzo Island. On the northern extreme of the rocks is a small islet, about 12 feet above water; close to which, on the north side, is a rock awash with the surface of the water, about the size of a boat. From the islet, the rocks extend, under water, a mile and a half in a W.N.W. direction. H.M.S. Alert tried for soundings, and found no bottom between the Hormigas and Lorenzo until within a cable's length of the north rock, when she had 60 fathoms rocky bottom: so that the lead will not apprize a ship of her danger in their vicinity.
>
> "The latitude of the southern part is 11° 58′ 15″ S., and long. 77° 34′ W.; assuming the Castle of Callao to be in 77° 2′ W."

These rocks are generally laid down about 15 minutes too far to the westward.

36.—BREAKERS IN LAT. 27° 49′ N., AND LONG. 54° 29′ W. *Reported by the Brig Erato, Captain Mossop, from Quebec to Jamaica.*

We insert the following extract from the Jamaica Gazette, but have no great faith in the correctness of the report. At the same time, we shall be thankful to any of our readers who will take an opportunity of substantiating or disproving it:

> "*Thursday, Nov.* 15, 1832.
>
> "At four, A.M. made breakers on the weather cathead; light wind from the north-east, and a fine clear moon; put the helm aport, and went to leeward of

it. Called all hands, tacked ship, put the small boat out, and made the rock and breakers again; sent the mate and two men with the boat to ascertain what it was, and laid by with our head to the south-west. The boat returned in twenty minutes, and reported that they were within twenty feet of the rock, which was about forty feet long, cleft in two; the north part peaked, and the south table-land. We were within a hawser's length of it with the vessel, and no bottom with the twenty-fathom line."

TIDE-TABLE FOR MAY, 1833.

Mean Time.

Week Day	Month Day	**Plymouth** *Dock Yard.*				**Portsmh.** *Dock Yard.*				**Sheerness** *Dock Yard*				**London** *Bridge.*				**Aberdeen.**				**Leith.**				Month Day	☽'s Age at Noon.
		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.			
		h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h	m.	h.	m.	h.	m.	h.	m.	h.	m.		
W.	1	3	15	3	43	9	32	9	57	10	49	11	14	....		0	21	11	21	11	44	0	31	0	56	1	11·4
Th.	2	4	8	4	31	10	19	10	41	11	35	11	58	0	48	1	10	....		0	6	1	19	1	41	2	12·4
F.	3	4	53	5	13	11	2	11	21	....		0	19	1	32	1	50	0	26	0	47	2	1	2	22	3	13·4
Sat.	4	5	34	5	55	11	41	....		0	40	1	1	2	10	2	28	1	7	1	26	2	42	3	1	4	Ful
S.	5	6	16	6	35	0	1	0	22	1	20	1	39	2	47	3	5	1	44	2	3	3	19	3	38	5	15·4
M.	6	6	53	7	11	0	42	1	2	1	58	2	16	3	21	3	38	2	22	2	40	3	57	4	15	6	16·4
Tu.	7	7	29	7	46	1	21	1	40	2	34	2	52	3	54	4	11	2	59	3	18	4	34	4	53	7	17·4
W.	8	8	4	8	23	1	59	2	20	3	13	3	31	4	29	4	48	3	36	3	55	5	11	5	30	8	18·4
Th.	9	8	42	9	2	2	41	3	3	3	54	4	14	5	7	5	27	4	16	4	38	5	51	6	13	9	19·4
F.	10	9	23	9	45	3	26	3	49	4	36	4	58	5	48	6	11	5	0	5	25	6	35	7	0	10	20·4
Sat.	11	10	7	10	33	4	14	4	40	5	20	5	44	6	37	7	4	5	52	6	23	7	27	7	58	11	LQ
S.	12	11	2	11	35	5	9	5	40	6	14	6	42	7	38	8	18	6	58	7	35	8	33	9	10	12	22·4
M.	13	....		0	12	6	14	6	48	7	14	7	48	9	2	9	44	8	14	8	52	9	49	10	27	13	23·4
Tu.	14	0	51	1	24	7	21	7	50	8	22	8	58	10	23	10	58	9	27	9	57	11	2	11	32	14	24·4
W.	15	1	55	2	25	8	20	8	48	9	31	10	0	11	28	11	59	10	24	10	49	11	59	....		15	25·4
Th.	16	2	52	3	20	9	12	9	36	10	26	10	50	....		0	22	11	10	11	30	0	24	0	45	16	26·4
F.	17	3	44	4	7	9	57	10	18	11	12	11	33	0	38	0	55	11	50	....		1	5	1	25	17	27·4
Sat.	18	4	28	4	49	10	39	10	58	11	53	....		1	12	1	30	0	8	0	26	1	43	2	1	18	28·4
S.	19	5	9	5	30	11	18	11	37	0	15	0	36	1	45	2	2	0	45	1	4	2	20	2	39	19	NM
M.	20	5	52	6	14	11	58	....		0	58	1	19	2	20	2	36	1	23	1	43	2	58	3	18	20	0·9
Tu.	21	6	35	6	55	0	20	0	41	1	39	2	0	2	54	3	12	2	4	2	25	3	39	4	0	21	1·9
W.	22	7	15	7	36	1	4	1	25	2	20	2	41	3	30	3	51	2	47	3	10	4	22	4	45	22	2·9
Th.	23	7	56	8	17	1	47	2	11	3	4	3	27	4	13	4	35	3	33	3	57	5	8	5	32	23	3·9
F.	24	8	39	9	2	2	34	3	1	3	52	4	15	5	2	5	28	4	22	4	48	5	57	6	23	24	4·9
Sat.	25	9	27	9	54	3	27	3	54	4	41	5	7	5	54	6	28	5	16	5	46	6	51	7	21	25	5·9
Su.	26	10	21	10	55	4	24	4	55	5	33	6	5	7	0	7	40	6	18	6	55	7	53	8	30	26	FQ
M.	27	11	31	....		5	31	6	11	6	39	7	15	8	23	9	4	7	34	8	14	9	9	9	49	27	7·9
Tu.	28	0	10	0	57	6	50	7	26	7	55	8	36	9	43	10	17	8	54	9	29	10	29	11	4	28	8·9
W.	29	1	35	2	10	8	1	8	34	9	16	9	49	10	57	11	25	10	3	10	33	11	38	....		29	9·9
Th.	30	2	42	3	13	9	3	9	30	10	19	10	47	11	53	....		10	59	11	23	0	8	0	34	30	10·9
F.	31	3	41	4	6	9	55	10	17	11	11	11	33	0	18	0	42	11	45	....		0	58	1	20	31	11·9

The times of high-water, nearly, at other places on the coast, may be found with the assistance of the above table within certain limits. Thus, the times in the Plymouth-Dock column are to be used for all places between the Land's End and Lyme Cob; and those in the Portsmouth column, for all places between Portland Bill and Beachy Head; by adding or subtracting the time opposite each place, according to the sign + or —.

The times of high-water at Plymouth Dock-Yard are to be used with the difference against the following places, to find the time of high-water there on the same day:—

	h. m.		h. m.
Mounts Bay and Lizard	— 1 3	Eddystone	— 0 18
Falmouth Harbour	— 0 18	Dartmouth and Torbay	+ 0 27
Fowey Harbour	— 0 18	Exmouth	+ 0 52
Cawsand Bay	— 0 10	Lyme Cob	+ 0 27

The times of high-water at Portsmouth Dock-Yard are to be used as above, for the following places:—

	h. m.		h. m.
Portland Bill	— 6 10	Cowes	— 0 55
Weymouth Harbour	— 5 10	Southampton	— 1 0
Christchurch and Poole Harbours	— 2 50	Bembridge Point	— 0 40
Needles Point	— 1 55	Selsea and Arundel Harbours	+ 0 5
Hurst Chamber	— 1 40	Shoreham Harbour	— 0 25
Lymington	— 1 25	Beachy Head	— 1 25

VOYAGES AND MARITIME PAPERS.

I.—OBSERVATIONS ON PORT WILLIAM AT REDCAR, *on the South Side of the Tees Bay, Coast of Yorkshire, projected by* W. A. BROOKS—*C. E. Stockton.*

IN presenting our readers with the accompanying plan of the harbour proposed by Mr. W. A. Brooks, to be constructed at Redcar, we feel tempted, by the vast importance which belongs to this project, in a national point of view, to make a few observations respecting it, in addition to those which appeared in a former number of our work. For whether we consider it merely as a port of refuge for the tempest-driven vessel, as an asylum harbour and general rendezvous for our fleets when active operations are going forward in the North Sea, or whether we look on it in the light of a shipping port for European commerce, in each of these considerations we are so fully impressed with its importance, as to be satisfied that too much cannot be said in its behalf.

The deficiency of harbours on the eastern coast of England is well known, and the Tees Bay, although in many respects it is peculiarly calculated for the site of a first-rate port to supply this deficiency, has too often been the scene of the loss of life and property, from the wrecks which have occurred there.

The difficulty experienced by vessels, of entering the river Tees in bad weather, is well known to be so great, as to render it of no avail to those that may run for it to avoid being wrecked. The entrance is so badly situated with respect to the sea, and the channel of the river so narrow, and its direction so unfavourable, that even after a vessel has arrived within the bar, there is every chance of her striking on the dangerous sands by which she will be encompassed. This unhappily is of too common occurrence, and renders the great estuary of the Tees, instead of a place of security, one of infinite danger at present to the unfortunate mariners who may be embayed on this coast in an easterly gale. Compelled to seek refuge from the fury of the storm, or to founder at sea, the devoted vessel runs for the river Tees as a last, and too often as a fatal, resource. Mr. Brooks has given us some lamentable instances of the want of a harbour which vessels might easily run into in case of bad weather; and while we are yet writing, a fine vessel, the Wesley[*] of Sunderland lies on the North Gare sand at the mouth of this river, a prey to the dangers to which we have just alluded. The want of a harbour on the east coast of England in the vicinity of the Tees, on this account alone, is generally acknowledged; but there are others which render it, if possible, still more to be desired.

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[*] This vessel, in attempting to enter the Tees, got on the North Gare, and was totally wrecked.—See our Table of Wrecks of British Shipping.

Let us consider it in the light of a naval station. Our naval arsenals are all seated in the southern portion of the country, and we can see no other reason why they should be so, than that of nature having granted local advantages there which suited such a purpose. The vicinity of a foreign shore (frequently that of an enemy) could be no reason; for in this case the southern and the eastern coast of England would be pretty nearly on a par; and there can be little doubt, that, had the eastern coast possessed such excellent ready-made harbours as Portsmouth and Plymouth, and had the southern coast been one straight line of cliff without any opening, that we should have the same first-rate naval arsenals on the former as we now have on the latter. We have alluded already, in a previous number, to the inconvenience occasioned by this want of a harbour to our fleets, which have in consequence been compelled to ride in an exposed anchorage for many days together on our coast, without the possibility of communicating with the shore; and while harbours of lesser pretensions are constructing on the same coast for the purposes of commerce, we see no steps taking to supply the deficiency in this more extended point of view.

For the purposes of a naval station many good qualities are required in a harbour, which we are satisfied will be found at Redcar, in the Tees Bay. In such a harbour there must be ample room, while there is ample security, and there must be an easy ingress and egress at all times of tide, besides which these facilities should be the same by night as by day. Now, we will advance the unqualified assertion that the proposed harbour at Redcar could be taken at all times of tide, in the severest weather, by the largest class of vessels. The breadth of the entrance is 1300 feet, and the depth there, at low water, three fathoms; so that by the arrangement of lights, vessels could enter by night as well as by day. In point of security, it is a remarkable fact, that even in its natural condition the anchorage between the two ridges of alum-shale rocks, called the Scars, which are proposed as the bases of the piers of the harbour on its north and south sides, has afforded ample safety in bad weather; a fact which goes far indeed to prove that we have here substance and not shadow. The bottom is formed of sand lying over blue clay, the tenacity of which added to the protection of the Salt Scars, once enabled a smuggling brig, which had been caught there in bad weather, to ride out a north-east gale at her anchors in safety, even at high-water. But we have another fact to advance, which is no less important, regarding the security of this anchorage in bad weather, even in its present natural condition, which is, that the fishermen and pilots of Redcar, when in consequence of the bad state of the weather they cannot go to their usual fishing ground at sea, employ their nets on the site of the proposed harbour, between the Scars, and in the south bay; a tolerably good proof both of the quiet state of the sea and the nature of the bottom; for if this were rocky, such a thing would be impossible. Another instance may also be mentioned, of the comparatively quiet state of the sea at Redcar in bad weather. On the 27th March, 1808, the smack, Caledonia, of Aberdeen, was wrecked on the outer part of the Salt Scar, when seventeen of her crew and passengers were drowned, and six only saved. Part of this vessel's cargo consisted of granite paving blocks for London; and although a period of twenty-five years has elapsed since that event took place, the same blocks remain where she was wrecked; thus affording a convincing proof of there being little or no ground-swell, or weight of sea, where it is proposed to make the harbour, in comparison with that which is found on other parts of the coast of England. In fact, there never is much sea at Redcar; a rock called the "High," on which there is fifteen feet of water, assists to protect the site of the proposed entrance of the harbour; and the ridges of alum-shale, called the Scars, completely secure the enclosed space on either side. The area of the harbour would amount to 435 acres at high water, and 313 acres available at low-water spring tides, for loaded ships: that at Kingstown, in Dublin bay, is not more than 230 at high water; from which some idea may be formed of the superiority of Redcar. We shall have ample space, therefore, for any fleet that may be employed in the North Sea. In some pier harbours, a great oversight has been committed—sufficient room has not been left for vessels to round to, and shake the wind from their sails; a failing which will be avoided at Redcar by the plan before us.

Having considered some of the first qualities which a naval asylum harbour ought to possess, and which will be found at Redcar, let us now examine the advantages afforded by the adjacent country, to render it a great naval arsenal. We have briefly touched on these in a former number, but we will now consider them more fully. Mr. Brooks tells us, that "an inexhaustible supply of free-stone is to be found in the quarries at Upleatham, situated about three miles from the harbour, the intervening country presenting every facility for the formation of an advantageous line of rail-way, and inclined planes for the descent of the material; from which it appears that this material is at hand, and only requires a trifling carriage, which Mr. Brooks calculates will cost 6d. per ton. But, considering it as the site of a naval arsenal, the construction of docks becomes the first point, and the nature of the shore at Redcar is such, that *docks for our first-rate men of war* might be constructed there for one-fourth the usual expense of such works at other places, and without the possibility of such failures which sometimes attend their construction. The chambers of the docks would have to be quarried out of the half-tide alum-shale rocks to nine feet or so, only, below the level of low water, to enable them to receive a line-of-battle ship, the ordinary rise of spring tides exceeding sixteen feet; in fact, nothing can be more favourable than the alum-shale rock in its nature for this purpose, on account of the solidity and facility with which the required docks or basins on the grandest scale might be constructed. A short distance to the south of Redcar is a manufactory of cement, the material for the formation of which abounds in the neighbourhood; an important consideration, where such works are contemplated. The adjacent rocks contain large quantities of iron-stone; and when we take into consideration that by means of the ship canal, projected by Mr. Brooks, to be made between the coal port of the Tees and the naval station of Port William, an abundant supply of coal can be also obtained at a light expense:—with these important advantages, a cannon and anchor foundry may be established there, to supply those articles 30 per cent. cheaper than at other places.

The sand hills among the Marske shores could also be converted into an excellent artillery ground; and there is also an abundance of pure spring-water, for the supply of shipping. These are the principal desiderata in a naval station; the rest of the works, such as rope walks, mast and boat houses storehouses, and such other component parts of a naval arsenal, would all follow in their usual order. The locality of Redcar, we must therefore conclude, is decidedly favourable for such a purpose. As a rendezvous for our North Sea fleets in a future war, where they would lie in ample security, and be enabled to put to sea on the shortest notice, and in the severest weather to keep up an intercourse with the shore, the projected harbour at Redcar would be most desirable—for such advantages were never yet experienced on the eastern coast; but, instead of them, as we have before observed, the contrary, with all the attendant inconvenience to the service, and expense to the country, was to be found.

But we have yet to consider Redcar in the light of a trading port, and in this point of view, so many and so great are the promised advantages, that even on this account alone it should be no longer neglected.

The fact of there being no port between the Humber on the south, and Leith Roads on the north, that a vessel can enter at low water, throughout so great an extent of our eastern coast, is a prolific cause of the loss of life and property, affecting not only the shipping interest, but the commercial prosperity of the country. By the establishment of the proposed harbour, that protection would be afforded; for, in consequence of its peculiar situation, being so far to leeward in easterly gales, vessels might always run for Redcar with the certainty of making it. But allowing that the harbour were full, or that by accident they should miss the entrance, the bay then to the south would afford them the desired shelter, by the position of the piers of the harbour, and the sea being broken by the high rock. The nature of the bottom in this bay is soft blue clay, which also lies beneath the sand on the shore; and the anchorage there is so good, that vessels, even in the present state of the place, have been known to ride out gales in safety: added to which, there can be no better situation as a last resource for a vessel to run ashore on, than the sands between Redcar and Marske.

In a commercial point of view, the establishment of Port William would be of material benefit to the general trade of the eastern coast, from the security it would afford to the navigation of the North Sea, and the impetus that will be given to the capital, which now lies almost dormant, and consequently deteriorating, during the winter months. Instead of this, constant employment would be found for thousands of seamen, who are now unable to maintain themselves in those months. One inevitable result of the present condition of the coast is an increased charge to the consumer of the produce from it; and, we believe, it may be safely anticipated that the colliers of the north, by the establishment of Port William, will be enabled to make on an average one-seventh more the annual number of voyages to London.

But it is not to the coal trade alone that we would confine ourselves, in considering the claims of Port William. The various little harbours on the coast are naturally entitled to become the outlets for the supply of coal from their respective districts; and in this capacity we hope to see them flourishing ports. Port William has far higher pretensions. The extent of the accommodations which the size of it would afford, are such as would entitle it to partake of the advantages of the East India trade, according to the alterations proposed in the Company's charter—advantages which the people of Newcastle are already thinking of. Newcastle is proverbially a coal port, admitting vessels only of a certain tonnage; and as a coal port Newcastle will flourish, as it always has but from natural causes could never vie with Redcar. The peculiarly good qualities which Redcar possesses of a great depth of water, a large superficial extent, and an advantageous local situation, are such as would render it an eastern Liverpool, the channel by which the manufactures of Leeds Manchester, Birmingham, &c. would find their way to the Baltic, as they do already to nearly every part of the world through Liverpool and Bristol. This is the light in which we would consider the proposed harbour at Redcar as a trading port; and if we are not mistaken, in this sense, far from interfering with its lesser sister ports, it would benefit them, and the whole surrounding country, in no trifling degree. The facilities which it would afford as a shipping port for Baltic ships, which would thus avoid the dangerous and intricate navigation of the Thames, are important considerations, for they would act powerfully on the whole central commerce of the country, and be the means of as easily introducing other foreign produces. As a harbour for the northern steam boats to call at, for the purpose of taking in fuel and landing passengers, no situation would be more convenient than that of Redcar; and they would thus be enabled to start with half the quantity of coals now necessary for the voyage to London, and thereby be enabled to take a greater freight of goods. In the time of war, now that steam navigation has so materially affected our naval warfare, there can be little doubt that a permanent and secure station on our eastern coast, would be required for the safety of our steam vessels of war; which Redcar would well supply, on account of its being the nearest coal sea port to the Thames.

In addition to the foregoing, there are many other considerations which render the establishment of Port William desirable, but we will conclude our remarks for the present with a brief description of the harbour, as proposed by Mr. Brooks. It will be seen on reference to the plan, that the piers forming the north and south sides of the harbour are to be built on the two ridges of rocks called the Scars, which are evidently so peculiarly well calculated for the purpose, as will be seen on reference to the transverse sections, No. 1, 2, and 3 in the plan, and to which Mr. Brooks alluded in his letter which appeared in our last number. No. 1 is a section of the harbour, which from its great width (nearly half a mile,) has necessarily been made with different scales of widths and heights, to allow them to be more discernible. Nos. 2 and 3 are however on one scale, and shew at once the immense saving of material in building the north and south sides of the harbour upon the basis of the half-tide rocks, of one of which the northern Salt Scar, No. 2 is a section. The breakwater constructed on this requires a sectional area of only 1700 square feet. It will be observed, that the latter part of the enclosure of the harbour bears only a small proportion (less than ⅕ to the north and south sides.) It is proposed that they shall be 26 feet broad on the top, exclusive of a parapet 4 feet in thickness, and extending out in the direction as marked in the plan. The northern pier will be 12.244 feet in length, about two miles and half, while the southernmost would be 300 feet, and they would certainly surpass in beauty any thing of the kind yet completed in this or any other country. Of the two views in the plate, the upper one represents the appearance of the Scars extending in two parallel ridges off Redcar, as seen at low water from the Marske sands, the village of Redcar being on the left, and the point of Hartlepool the first in the distance. This will convey, to those who may not be acquainted with Redcar, some idea of what is already done by nature in favour of converting it into a harbour. The lower view in the plate represents the appearance of the harbour from the opposite direction, with the proposed piers completed, shewing the Marske beach and Huntcliff in the distance. Considering that the further or eastern pier will be more than a mile in length, it is evident that the size of the ships is exaggerated. This is immaterial, and we have noticed it only to prevent our readers from receiving a wrong impression of the size of the proposed harbour. The lights at the entrance might be so arranged, that the harbour might be made by night as well as day.

A duty yet remains to be performed towards ourselves. We must not be supposed to have advocated the construction of Port William on any other than purely national motives. While we find other works of a similar description immortalizing the names of our monarchs under whose government they were projected and formed, we are fully satisfied that an opportunity here presents itself of following the example with far more splendid results; and, as we have before observed, the projected harbour of Redcar would be worthy, when completed, of bearing the name of our most gracious naval Sovereign, surpassing, as it would, all of them in magnificence and national utility. Satisfied as we are of the great advantages which Port William would afford in a truly national point of view, we consider it our duty to lend such a project our firmest support. Sooner or later, we are convinced that it will be adopted. Those advantages which it possesses require only to be known, and Redcar will gradually become a flourishing port; supplying that lamentable deficiency in harbours which our eastern coast has so long laboured under, and assisting us in preserving unimpaired that maritime supremacy over other nations, which belongs to England, which she has secured with the blood of some of her bravest sons, and which Englishmen have been taught, from the very nursery, to look upon as their natural and undeniable birthright.

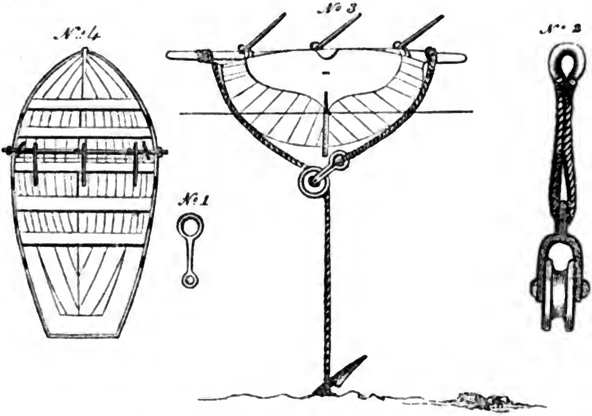
II.—METHOD *proposed by* CAPTAIN EDWARD BELCHER, R.N., *for* WEIGHING AN ANCHOR BY BOATS.

To the Editor of the Nautical Magazine.

SIR—I have much pleasure in forwarding you the accompanying account of a method which I have successfully adopted for weighing an anchor. The cutters of the Ætna are fitted for the purpose, in a manner which may be explained as follows :

At the extreme bearing of the boat (about three-fifths from the stern) two irons similar to those for studding-sail-booms, like figure No. 1, are fixed to the gunwhale of the boat on each side, so as to admit of turning up high enough to allow a spar being passed through them. The spar should be about four feet longer than the extreme breadth of the boat, so as to project about two feet on each side beyond the gunwhale. The irons it will be seen prevent the spar from shifting forward or aft. A strap like fig. 2, having a large iron gin at one end, is placed over the starboard end of the spar, the buoy-rope being first rove through it, and passed over on the larboard side of the boat. Three double gaskets dogged round the spar, one in the middle of it, and one towards each side of the boat, answer the purpose of receiving levers, which may be made of the boat's stretchers, or any thing else as convenient.

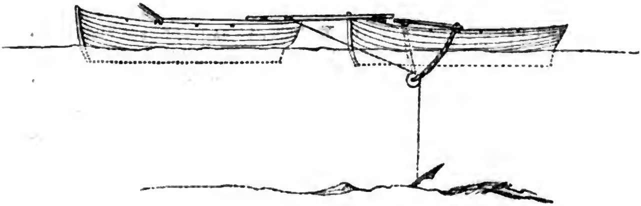
The following figure, No. 3, represents a perspective view of the boat fitted accordingly ; and No. 4 is a bird's-eye view of the same :



Thus you will perceive that the strain is fairly brought to the centre of the keel, and the boat will nearly support her tonnage.

I intend, where great strain is required, to make a span strop of the same kind to support the gin, and bringing the boats head and stern together, to secure them in that position by the end of a spar lashed to each. The men will all be sent into one boat, and the buoy-rope passed through the gin, brought up over the stern roller to the windlass, by which means one boat will be relieved entirely from the weight of her crew.

The annexed sketch will explain it.



I find that either of the Ætna's cutters can weigh a 10 cwt. anchor, and I hope yet in smooth water to succeed with her bowers of 22 cwt. The plan by two boats, with a spar across both, and the buoy-rope between them, I have frequently used with success. One cutter of 25 feet, and a jolly-boat of 18, weighed an anchor of 50 cwt.

Yours, &c.
E. BELCHER.

III.—OBSERVATIONS AND EXPERIMENTS MADE ON BOARD H.M. STEAM-VESSEL RHADAMANTHUS, *by* HENRY CHATFIELD, *Member of the School of Naval Architecture.*

ON Saturday the 12th of January, H.M. Steam-vessel Rhadamanthus made a short excursion from Hamoaze, nearly to the Eddystone and back, for the purpose of trying her general efficiency, after having had her engines, &c., overhauled at Plymouth yard. The Rhadamanthus was at sea (that is, outside the Breakwater) about two hours, during which time I directed my attention to some of those features connected with the science of steam-navigation, which, in my opinion, should be carefully looked into on board every steam-boat; and the subjoined particulars are the results of my observations on board.

In all accounts relating to nautical experiments it is desirable to be as explicit as possible in speaking of the *state of the sea*, which I conceive may be best judged of by knowing its absolute effect upon a vessel. To determine this, a pendulum was provided, by means of which it was ascertained that the rolling of the Rhadamanthus, whilst carrying her foresail, fore-topsail, and jib, averaged *nine degrees*, both out and home; that is, six degrees to leeward, and three degrees to windward. Sometimes the ship rolled as far as 15° to leeward, and, on her return, as much as 6° to windward; but, upon the whole, the average of *nine* degrees may be considered a fair mean of the angle of oscillation.

The Rhadamanthus is one of the only two armed steam-vessels now in the British Navy. Her tonnage is 812 tons, and the power of her engines is estimated to be 220 horses' power. The following are those dimensions of her machinery which it is essential to give, to enable the reader to judge of the value of the facts ascertained.

Her power consists of two engines of	110 horses' power each.
Diameter of Cylinder	55 inches.
Length of Stroke	5 feet.
Extreme diameter of which, from outside to outside of paddle[*]................	18 feet 6 inches.
Area of each paddle	20 feet, .825.
Height of shaft above water	5 feet 6 inches.
Consumption of coals per hour, by actual measurement.....................	25 bushels.
Draft of water of the vessel, forward	13 feet 3 inches.
——————— abaft	14 .. 3 ....

The length of the stroke and the diameter of the cylinder enable us to compute the *quantity of steam* expended at each revolution; the consumption of coals per hour informs us what *fuel* is actually necessary to the generation of a given quantity of steam; the circle described by the paddle, the size of the paddle, and velocity with which it travels, give us a true measure of the *motive power* employed to propel the vessel; and by means of the draught of water (and the lines from which the vessel was built) we may proceed to calculate the effect of the magnitude and form of the vessel's displacement, in resisting direct progressive motion, which may be done with mathematical accuracy from the data already given.

It will be seen that the *velocity of the paddle* is the only variable quantity. Now, it is obvious that this velocity is dependent on the following considerations, viz., the working-pressure of the steam, the efficiency of the condenser, the accurate working of the machinery, the state of the sea, direction of the wind, and other contingencies, which it is the business of an experimentalist to remark. The annexed table, and the observations which follow it, were therefore made on the day of trial, to exemplify the means by which I propose to carry my views into effect:

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[*] The paddles were reefed nine inches, the diameter of the wheel being 21 feet.

Table.

Date	January 12th, 1833.		
Time of Observation	2h. 30m. P.M.	3h. P.M.	3h. 30m. P.M.
Wind	E.S.E.	E.S.E.	E.S.E.
Vessel's Course	S.W. b. S.	S.W. b. S.	N.E. b. E.
Working pressure of the steam	3½lbs.	4lbs.	4lbs.
Height of Mercury in barometer attached to condenser	27 inches.	27½ inches.	27½ inches.
No. of Strokes, or revolutions, per minute	13 Strk.	16 Strk.	17 Strk.
Speed of the vessel	6½ knots.	8 knots.	8½ knots.
State of the sea	considerable swell, causing vessel to roll nine degrees.		
Remarks	No sails set.	Foresail, fore-topsail, & jib.	Foresail, fore-topsail, & jib.

There was a fresh breeze from E.S.E. which occasioned considerable sea, and as there was a long ground-swell at the same time from S.W. they together produced rather a heavy cross-sea. In going out, the vessel steered S.W. b. S. which brought the wind abaft the beam; but on her return, her course was N.E. b. E., at which time she was close-hauled, the wind being then before the beam.

It will be found by reference to the table of experiments—

1. That when the wind was abaft the beam, the speed of the vessel was less than when she was close-hauled, her velocity being retarded by the head-sea in one case, while it was accelerated by a following-sea in the other.

2. That the speed of the Rhadamanthus, by log, was in every instance just ***half as many knots per hour*** as the number of revolutions made by the wheel per minute.

The speed of the vessel being half as many knots per hour as the number of strokes per minute, was a curious result; but it by no means follows, that what was true in the case of the Rhadamanthus must of necessity be true for other steam-boats. Whether it is so, or not, can only be found out by a methodical registry of facts on board other boats, and instituting careful comparisons of results. Had the Rhadamanthus gone out for the express purpose of making experiments, many particulars relating to herself would have been ascertained which are now unknown. She would then, of course, have been tried both with and without sail; also against a head-sea, as well as with a following-sea; and under other circumstances, from which a more definite idea might be formed of the true character of the vessel. But this was not the object of the cruise; and I made the observations which are the subject of this paper solely for my own satisfaction.

If a skeleton form of report were drawn up with some care, and supplied to every steam-vessel, accompanied with the necessary directions, we should shortly discover what results are common to all, and what are not; and there can be no doubt that if we were to examine and reason upon every new truth philosophically, we should soon attain an intimate knowledge of some of those laws of nature with which we are at present very imperfectly acquainted, and thereby establish true inductive principles to proceed upon.

The object of these summary remarks is to make good this position, by shewing that it is not difficult to make a systematic collection of useful facts, by means of which correct calculations may be made relative to velocity, consumption of fuel, necessary stowage for coal for a stated distance or period, &c. &c. Under the existing practice, the naval architect and the civil engineer act too *independently* of each other; but if it be our wish to become enlightened in the science of steam-navigation, the naval constructor must not only study the "*effects*" produced upon a vessel at sea, but must also acquaint himself with the peculiarities of his ship, and the performance of the engines, with a view to arrive at the "*causes*" which operate in making different boats more or less efficient. This can only be done by putting aside every thing like *professional craft*, and instituting repeated experiments, in order to analyze them upon mathematical principles.

In conclusion, it may be remarked, that the Rhadamanthus manifested none of that vibratory motion, on the day in question, which is so commonly complained of on board almost all steamboats; at the same time, it can hardly be said with confidence, that she is therefore free from the tremulous motion usually produced by the concussion of the paddles as they come in contact with the water, since the number of revolutions did not exceed *seventeen* per minute during the day. And before we close these elementary remarks, it may be as well to state, that the Rhadamanthus has an *after* stoke-room, in addition to the engine-room on the fore-side of the boilers, and that the temperatures of both were noted. That in the engine-room was 58°, while the passage between the boilers leading to the after stoke-room was 104°, and the after stoke-room itself was ——.* The state of the atmosphere was 50°. Every scuttle upon deck having been open during the whole cruise, and the fore-sail being immediately over the engine-room, caused a great current of air below. The scuttle of the after stoke-room was also open.

The inferences to be drawn from these last observations are, that in a warm climate, or in bad weather, the *ventilation* of a steam-vessel, or some mode of preventing the *radiation of heat* from the boilers, are points worthy of attention; and it is hoped that enough has been said in the former part of this paper, to prove that much benefit would accrue from supplying every steam-boat with a skeleton form of report, and enforcing strict attention to every minute circumstance which constitutes real experience.

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* The correctness of the notation which was made respecting the temperature of the after stoke-room having been *questioned*, I have omitted to insert it. Had these elementary hints been published for some other object than merely to invite inquiry into the characters of all steam-boats, there would have been some objection perhaps to the omission; but at present there can be none.

IV.—Magnetic Experiments on Chronometers.

Many of our readers will peruse with much interest the following account of some experiments communicated by Messrs. Arnold and Dent on the subject of magnetism affecting the balances of chronometers. That magnetism does influence the chronometer has long been supposed, and, in order to obviate its effects, other metals, instead of steel, have been used in the construction of the balance and its spring; but the subject has not hitherto received that attention which its importance demands, and we know of only one series of experiments, besides the following, to have been made, with the view of ascertaining to what extent the magnetic force is capable of deranging the performance of this machine. It has been generally admitted by seamen, that a chronometer changes its rate after its removal on board, and preserves what may be designated a sea rate. The subject appears to have been totally neglected before the year 1820, when a paper "On the errors in longitude, as determined by chronometers at sea, arising from the action of the iron in the ships upon the chronometers," was drawn up by Mr. George Fisher,* and communicated to the Royal Society in the month of June in that year, by John Barrow, Esq. We will here give the abstract of the paper to which we have alluded:

> "The sudden alterations in the rates of chronometers, when taken on board ships, are generally ascribed to the motion of the vessel; but from circumstances connected with the chronometers of the Dorothea and Trent, during the late voyage to the North Pole, the author is induced to refer these alterations to other causes: he found that in all cases the gaining rates were increased, and their losing ones diminished, on ship-board. That this acceleration does not arise from the ship's motion, was shewn by its occurrence when the Dorothea and Trent were beset with ice, and when they were at anchor close in shore, without any perceptible motion; nor does it appear that change of temperature was at any time the cause of this change of rates. That the iron in ships becomes magnetic is shewn by its polarity, the whole forming, as it were, a large magnet, having its south pole on deck and its north pole below. The inner rim of the balance of chronometers, which is made of steel, will therefore be liable to magnetic action, which will be sufficient to cause a very sensible alteration in their rate of going.
>
> "Mr. Fisher concludes this communication with some account of experiments on the action of magnets upon chronometers placed in various positions, with respect to their balances, by which it appears that an acceleration in these

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* The present chaplain of H. M. S. Victory.

cases always ensues. It also appears probable, he observes, that the force of the balance-spring is affected by the same cause, since chronometers in which they are made of gold, though more difficult to adjust, keep better rates at sea than others.

"An appendix, containing tables of rates furnished by Mr. Coleman, is annexed to this paper."

Both series of experiments completely corroborate each other, and prove to the seaman the secret and prolific causes of derangement to the good performance of his chronometer, causes which must be ever varying their effects, and which must depend on the situation of the ship, and the direction of her head. In the high latitude in which Mr. Fisher's experiments were made, the deranging effects proceeded from the iron of the ship, independent of the magnetic effects of the earth, which latter must increase and contribute its deranging effect likewise in lower latitudes. To have discovered the means of removing these difficulties by the exclusion of metal entirely from the balance-spring, and making other alterations in the balance, which Messrs. Arnold and Dent have effected, must be considered as the greatest improvement which the chronometer has received since it has been invented—an improvement which will contribute to the protection of life and property, and the advancement of geography.

To the Editor of the Nautical Magazine.

84, Strand, 11th April, 1833.

Sir—We are enabled at length to perform our promise of furnishing you with a detailed account of our Chronometrical experiments with the magnet, that have been made at the Royal Observatory at Greenwich during the last few weeks, and to which you alluded in your Magazine for February last. The remarks which were then made on the subject of our chronometers were designed chiefly to explain that we had taken upon ourselves to examine "de novo" the entire theory of those valuable machines, with a view not only to simplify the construction of that most important member, the balance, which neither theory nor practice have as yet been able to rescue from the complication of difficulties which result from its present state; but also, as a necessary consequence to our success in this particular, to lessen the great price which has hitherto been demanded for chronometers, and thus to remove a principal obstacle to their more general employment in the Royal Navy. As far as we had then proceeded, our wishes had been fully realized by our having actually produced a very material reduction in them of one-third of their former price, and as many of your readers will be anxious to learn the cause of such an alteration, we venture to offer you the following explanation of it, and to enter more fully into the improvements which we have lately introduced in the balance and other parts of the chronometer:—

The principal feature of our last experiments consisted in the trial of a balance of an entirely new construction, in several chronometers, the rates of which were recorded in your 12th number. This balance was constructed by Mr. Arnold some years since; in fact, the first trial made of its merits was with chronometer No. 521, the rates of which were particularly mentioned by you in your paper before alluded to. The balance constructed on the old principle was considered by Mr. Arnold to be defective in many respects. One or two of its most obvious objections may be more plainly shewn, by referring to the annexed figures, which represent the two forms in which the balance is at present made.

Fig. 1.

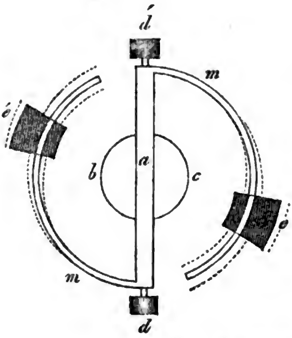
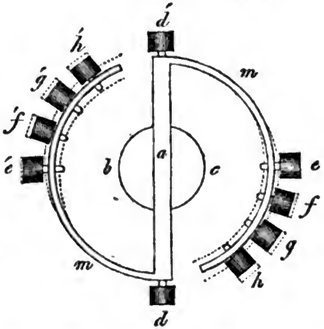


Fig. 2.



In both figures, the letter *a* distinguishes the arm of the balance, *composed of steel.*

Through the centre of these arms pass the verges or axes, round which, as is seen in the figures, are coiled the balance-springs *b*, *c*. The lamina of brass and steel for the compensation are shewn at *m*, the inner circle being of steel, and the outer one of brass. In fig. 1 *d* and *d'* represent respectively the timing-screws for the six and twelve hours; the sliding weights *e* and *e'* are for the compensation. Now, if any alteration be requisite for the timing of the positions, &c., it is effected by reducing a small portion from these weights, a process which is necessarily attended with much inconvenience, as the balance must be entirely removed from the chronometer before such alteration can be made; and, moreover, the compensation for temperature is thereby disturbed.

Fig. 2 differs from the former, in the screws *e* and *e'* being entirely used for correcting the vibrations on mean time in the different positions, while the screws *f*, *g*, and *h*, and *f'*, *g'*, and *h'*, are used solely for temperature. The process of compensation in this balance is more simple and convenient than in fig. 1. A number of small holes being made in the lamina, the several screws are moved so as to form greater or less angles as the adjustments for temperature may require. In both figures the balances are represented as at the time when the perfect adjustments for compensation, &c., have been applied; the broken lines in each shew the variation of figure, the interior being that which they assume in heat, and the exterior that in cold, when under any great extreme of temperature. This deviation in the balance from the true figure of a circle may disturb its centre of gravity, as the lamina of the balance, their screws and weight evidently contract and expand unequally to and from the centre. Moreover, the balance is thus powerfully influenced by centrifugal force.

The explanation of our patent-balance we must leave for a future opportunity, the subject being of so much importance, that we should necessarily occupy more of your attention than would be reasonable. We will merely state, that the objections which we have here pointed out are entirely removed by this new balance.

Your readers will be able to judge from the rates of the chronometers in your 10th number how far this alteration in the balance is worthy to be considered as an improvement. It must not be forgotten, that inquiry has but now commenced, and that perfection, or any approximation thereto, must be the work of time.

We will now proceed to lay before you the final experiments which we have made, with a view to ascertain the magnetic influence on the chronometers.

Several reasons suggested themselves, to render this question important.

In the first place, we have repeatedly found that a very considerable change takes place in the rate of our chronometers, on removing them from our house to the Royal Observatory for trial. We do not mean to quibble about two or three tenths of a second, because the removal of them from one place to another might have a tendency to produce for a time errors of this magnitude. But we now allude to one or two seconds deviations in rates, which it must be allowed are tangible quantities. Now, in the carriage of a chronometer from London to Greenwich, by some horizontal motion accidentally given, a discrepancy of one or two seconds in the *actual error* of the chronometer may be produced; but by experiments it is found that any casual accelerations in the vibration of the balance produce no permanent injury to the rate when the equilibrium is restored. We have known many instances (and we are not singular in our observation) where, assuming the mean rate of a chronometer in the Strand to be $3^s,0$ per diem, the removal to Greenwich has produced an immediate and constant rate of 4^s or 5^s per diem. The same may be said of the removal of chronometers from Greenwich to the Strand.

We are of course founding our remarks on observations made on the very best of our chronometers, where anomalies of this nature are too striking to be disregarded.

We are enabled from the public documents of the Royal Observatory relating to chronometers, to produce two or three instances of effects of this nature, to which we refer, having taken place on the removal of the chronometer from Greenwich to other places. We give the mean weekly rates before and after removal of three chronometers by various makers:

—4^s,5	—0^s,9	—4^s,5	At the Royal Observatory.
5 ,1	1 ,1	4 ,2	
4 ,4	0 ,9	3 ,9	
4 ,1	1 ,4	4 ,1	
—1 ,4	+2 ,6	—6 ,1	Elsewhere, immediately after removal.
1 ,4	2 ,8	6 ,6	
0 ,9	3 ,0	7 ,5	
0 ,9	3 ,1		

But we will carry this subject still further. What we have above stated will, doubtless, by some be objected to, on the score of the possibility of derangement from carriage from one place to another. We will now state a fact which cannot be opposed by the same argument.

Let a chronometer be so placed that the six hours of the dial be turned towards the north point of the horizon, and the twelve hours towards the south, so that a line drawn from six to twelve is in the line of the magnetic meridian of the place; hence a line drawn through the nine and three hours will pass through the east and west parts of the horizon respectively. Now, if the chronometer be rigidly kept in this position for some days unmoved, which, by a little contrivance, may be easily effected, a mean rate may be obtained; and if the chronometer be then turned in azimuth 180°, so that the twelve hours and six hours point, respectively, to the opposite points to which they did before—the three and nine hours to the east and west, respectively—the mean rate derived from it in this position will vary materially from the former rate. Again, if we obtain a mean rate from the chronometer when the twelve and six hours point, respectively, to the east and west, a third result will be obtained, differing from the two former so as to become a mean between them: and, lastly, by reversing the positions again in azimuth as we did the north and south, we shall have a result quite analagous to the last.

We do not, however, pretend to assert that the change in the late of the chronometer is so extensive, or so discernible from these latter experiments, as in the case of a removal of the machine from Greenwich to London; the circumstances are very different, and a different result is produced.

But the most remarkable effect attending the removal of the chronometer is that produced on going from the maker to the ship. It is also the most important one, because if magnetism really produces an effect on the rate of a chronometer, its proximity to large masses of iron, &c. being unavoidable on board a ship, the evil is then more severely felt, when not only natural magnetism operates, but its most potent auxiliaries, in the shape of the iron-work on board, &c., present so powerful an artificial magnet.

The polarity that exists in the iron which is to be found in every part of a ship is to be described by the constant deviation of the north end of the compass when placed on deck, towards the centre of the ship.

A remarkable instance of the effect produced by the removal of a chronometer to a ship occurred in the case of one of our chronometers, Dent No. 114, which, having established its fame at the Royal Observatory by gaining the first prize in the year 1829, was shortly after removed to His Majesty's ship Blossom, commanded by Captain R. Owen: no sooner was it on board, than it immediately altered its rate from 3^s,96 to 5^s,0 per diem, and preserved it with great satisfaction to all parties.

The foregoing are the principal reasons which induced us to refer the greater part of the evils which now affect the balance of a chronometer, to the effect of magnetism. The balance, according to its present construction, as we have before stated, is mostly composed of steel. The arm *is one solid mass of steel*, and a tolerably thick circle of the same metal forms the inner part of the lamina for the compensation. The balance-spring is also entirely formed of steel, so that, on the whole, a considerable quantity of this metal is introduced into a chronometer. The first experiment we made to investigate our theory of the magnetic influence on it, consisted in removing a balance from one of our old chronometers, which had shewn symptoms of fluctuation of rate in different positions, and suspending it by a very fine fibre of sufficient length, that the force of tension might be destroyed, at the same time taking special care to guard it from any current of air which might convey to it a rotatory motion by covering it with a glass frame.

This experiment was gratifying in the extreme, and at once confirmed our opinion of the existence of a *polarity* in the balance. We afterwards suspended several balances in the same manner, and in every instance the results were entirely as we had anticipated. The balance in fact performed in every respect the functions of a magnetic-needle, one end of it assuming the character of the north-pole, and the other end that of the south. The application of an artificial magnet caused effects quite analagous to those which would have been produced with the needle.

We must here make a necessary digression from our subject, for the purpose of endeavouring to account for the phenomenon of a polarity having been induced into the balance. The natural attraction of masses of steel and iron is one of those secrets of nature which no philosophy has yet been able to penetrate, and the mystery is equally as great in the case of the polarisation of metals. But, although we cannot explain the cause of these natural facts, we know from experience that the effects are very easily produced by artificial means.

Thus, if a bar of steel, hard, tempered, and apparently unmagnetized, be held in a position forming a slight angle with the vertical, so as to coincide nearly with the axis of the earth, and while in this position it shall receive several blows from a hammer, it will have acquired all the properties of a magnetic-needle. Now, in the mechanism of the arm of the balance, the very force which the artist employs in polishing it, together with the friction which it undergoes in working, may have a direct tendency to induce a polarity, so that there can be but little doubt that before the balance comes out of the hands of the workman, the evil is already accomplished.

To return now to our last-mentioned experiment. Having quite satisfied ourselves of the existence of a polarity in the balance, we next endeavoured to ascertain the relative magnetic influence exerted on different balances, constructed apparently on like principles, and of like dimensions. We accordingly set two balances oscillating at an angle of 35° from the magnetic meridian, and when this angle had decreased to 30°, the times occupied in each ten successive vibrations were accurately registered till the angle had decreased to 10°. We found, however, but little difference in the comparative effects produced by magnetism on them; but, as might be expected, the smaller the arm of the balance was, the more conspicuously was the magnetic force exerted, and the fewer the vibrations requisite to restore it to its natural position.

Our whole attention was now turned to devise a method by which the evils that manifested themselves so clearly might be obviated. The entire removal of all magnetical substances in the construction of the chronometer became indispensable, but the task was far more difficult than can at first be conceived. In the spring, for instance, the substitution of gold for steel is natural enough, but the danger of doing so is very great.

We have already discussed this subject in your last number, to which we beg to refer your readers.

It may, however, be proper to add, that the discovery of the use of glass for a spring, which we there noticed, did not take place till after the experiments which we are now explaining were nearly completed. We could not therefore connect the trial of the glass spring with those experiments. The springs we have used in the experimental chronometers in which we wished to avoid steel, have been made of gold, with an alloy of copper and silver, and to all appearances we have succeeded in making such a compound of these metals that the frangibility of the spring is very much reduced. A great deal yet remains to be done in this respect, although we have every confidence in the final success of our glass-spring, which will supersede the use of metals altogether.

Some little difficulty attended the alteration requisite to be made in the balance. The arm of our patent balance is composed of platinum and silver, and the two perpendicular screws are of brass, as well as the weights and timing-screws.

Our first wish was to suspend this new balance in the same mode as we had done the old one, and the result of the experiment was highly satisfactory. In the first place, it assumed no fixed position as the former one had done, but stood suspended in any horizontal position in which it was placed. The interference of the magnet did not indicate the existence of any attraction between it and the balance, although at times we were disposed to alter our opinion on this point. We do not, however, for a moment doubt the susceptibility of all metallic bodies to become magnetic. In fact, from experiments which we have made connected, though indirectly, with our present subject, we are quite convinced that every metal may be said to possess a certain degree of inherent magnetism.

In a future part of this paper we shall produce important evidence of the truth of this theory, at all events as regards brass, platinum, and silver.

The result of our experiments, however, with our patent-balance were sufficiently satisfactory to persuade us that we had entirely obviated the difficulties under which we previously laboured when the steel balance was employed. We then proceeded to apply it to a chronometer, and, with a view to establish our opinions of their correctness with still greater certainty, we resolved to follow up the question of magnetism by inquiring how far the rate of a chronometer was influenced by the interference of an artificial magnet, when the old and new balances were applied. We accordingly made two chronometers on the old principle, the balance and spring in one of them being composed of steel, with a brass outer circle, and the other a patent-balance of steel. We then made two on the new principle, with a gold spring, and a balance of platinum, silver, and brass, and, assuming the non-magnetic power of these latter chronometers, and with a view to determine the relative magnetic influence exerted on the steel spring and steel balance respectively, we had one chronometer with a steel balance and gold spring, and the other with a steel spring, and balance of platinum and silver. In the former case, the deviation in rate would be attributable to the steel balance, and in the latter to the spring. Six other chronometers, varying in the different alloys employed in the gold spring, and other particulars, were constructed, and the twelve were, by permission of the Lords of the Admiralty, placed at the Royal Observatory for trial.

The majority of these being entirely new chronometers, and, in fact, all of them, except 521, being made within the last two years, we were desirous, previous to the application of the magnet, &c., to have five or six months' rates, and the results were published in your Magazine for February.

After this trial, we chose out of these twelve chronometers some constructed on the principles above-mentioned, with a view to place them in contact with the magnet. Those selected were Nos. 606, 605, 615, 657, 600, and 274.* No. 606, and 605, have gold springs, and balances of platinum, silver, and brass. No. 615, and 657, have steel springs and steel balances. No. 600 has a steel spring, and balance of platinum, and silver: and, lastly, 274 has a gold spring and steel balance. It may be necessary to remark, that No. 615 has a patent balance, the upper bar of steel, and the lower bar of brass; and this circumstance will account for the difference in the effect produced upon this chronometer, and No. 657, which has a balance on the old construction, with an arm *entirely of steel*, and the inner circle rather stout lamina of steel, and the outer of brass. The steel bars employed, marked in the table of experiments A B and C, were each 16.12 inches in length, 1,68 inch in breadth, and 0,44 inch in thickness, and were strongly magnetised.

Great care was taken, when the magnets were not employed, to preserve their virtues uninjured. They were therefore placed in a deal box to keep them from the dampness of the atmosphere, though, from their highly-polished state, they could not contract much rust, and their opposite poles were connected by two bars of soft iron, so as to form, when in this position, the figure of a parallelogram.

It will here be necessary to recapitulate a part of our former statement relative to the particular construction of the several chronometers, before we enter into the experiments themselves, to which they have been subjected, in order that the object proposed by us in them may be more clearly shewn, and the means employed to develope certain anticipated results may be sufficiently developed.

It must be recollected that the problems we have endeavoured to solve have been, first, to ascertain the influence of magnetism on the balances and springs of chronometers constructed on the common principles; and, secondly, assuming its existence in the former case to prove its non-influence on chronometers constructed on principles suggested by our own experience. For these purposes, therefore, the following variety in the mechanism of chronometers became necessary:—First, to prove the affirmative, that magnetism influenced chronometers, by trying two balances and springs with the usual metal, steel; and, secondly, to establish the correction of this, by producing two balances and springs composed of such metals that the rate of the chronometer should not be affected; and, lastly, acting on the presumption, that the steel balances and springs alone would indicate changes in their performance, and with a view to ascertain the influence exerted in the balance and springs respectively, a third and fourth variety suggested themselves, whereof the former was to make the balance alone of steel, and the spring of the unmagnetised metal, and the latter was the converse of this. The process which has been adopted to obtain the required results has been simply this: The arm of the balance, when in a state of rest, as has been before stated, lies exactly in the direction of a line passing through the six and twelve hours, and these, with the three and nine hours, have been the chief points to which the magnets have been applied. The bars themselves at the commencement were placed in the magnetic meridian, and were kept in that position unmoved throughout the whole series of experiments. The chronometers were then presented to the magnets, the extended axes of the bars, which were perfectly horizontal, passing through the centre of the balances.

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* The chronometers here mentioned, that were not on the trial, were constructed during that time purposely for this experiment.

For the sake of uniformity, the six hours of each chronometer were first presented, and subsequently the twelve, three, and nine hours, commencing at a distance of seven inches, but eventually this was reduced to three inches.

In the case of No. 657, for instance, the north pole of the balance having been ascertained to lie under the six hours of the chronometer, (for either the north or south pole must in all chronometers lie under this point,) this part of the balance was first presented to the south end of the magnet, at a distance of seven inches; and, as will be seen, the rate is affected about 22 seconds per diem in this position of the chronometer. The distance was then diminished to three inches, and the increase in the rate is correspondent to the change in the relative distance of the chronometer.

It must be observed, that each end of the arm of the balance in its vibrations describes an arc of 180°, sometimes more and sometimes less, the north and south ends alternately subsiding at three and nine hours. Suppose the balance now to lie in a state of rest, the north end being in juxtaposition with the south end of the magnet, so that their action, the one on the other, is mutual. The mechanism of the chronometer being applied, the north end of the balance is carried to the nine hours, whilst the south end is brought under the three hours. The south pole of the magnet now attracts the north, and repels the south end of the balance, so that the conjoined influence of these forces causes the vibrations of the chronometer to accelerate, and the chronometer gains. Reverse this order, and let the twelve hours, or the south end of the balance, be in the vicinity of the south end of the magnet. Here the repulsive force which is exerted by the south end of the magnet upon the south end of the balance has the tendency to retard the vibrations, but, on account of the impossibility of placing the magnet at equal distances from the centre of the balances, from their not being situated exactly in the centre of the chronometer, the comparison of the effects produced on the rates in different positions is rendered uncertain. The disposition of the result, however, at the six and twelve hours, are, as should be expected, contrary in their nature, and the three and nine hours' position indicate a mean between these, and are quite consistent with each other in their relative effects.

The same reasoning will apply to the effects produced on No. 615. The results in this case are indeed not so satisfactory as in the former, but a special reason has been already assigned to account for the difference.

It will be gratifying to observe the constancy in the rates of the two chronometers, Nos. 605 and 606, although subjected to the same trial as Nos. 615 and 657. We confess that there is some slight appearance of an effect having been produced by the magnet in these chronometers. It would of course have been presumptuous not to have anticipated some change. The metals employed in their balances are chiefly brass, platinum, and silver. Now, brass, which is compounded of copper and zinc, under particular circumstances, is very manifestly susceptible of magnetism. In the Philosophical Transactions for 1786, page 62, Cavallo has confirmed this statement by producing instances which place the matter beyond conjecture. The same philosopher has also asserted, that platina shews magnetic phenomena in a proportion nearly equal to that of brass. In fact, all metals have been supposed, more or less, to exhibit this peculiar property. It will be observed, that the effect increased in proportion to the duration of the cause, which appears to accord exactly with a recently established principle, that time is an element in the acquisition of magnetic polarity, produced by induction, as well as for its loss, when the substance in which this induction has taken place returns to its original neutral state, by the subtraction of all extraneous influence. The removal of the magnetised bars from these two chronometers accordingly was not immediately followed by a change in their rates, but a gradual approximation to their former mean rate is discernible. But this is not the case with the two chronometers having steel balances, and the fact may be explained very easily, by considering that in the case of the steel balances the application of the artificial magnets was only an extension of an effect which in some measure was previously caused by the force of terrestrial magnetism. The magnet only increased this effect by certain quantities which were neutralised by the removal of the extra cause, and the original force produced by the earth alone retained its influence. But the case of the brass, &c., balances is widely different. Previous to the application of the magnet to these, no discernible effect was produced by magnetism; but when they were brought into the vicinity of the magnets, they were in the course of time made to possess their peculiar virtues. On the removal of the magnets, the properties they had induced were still inherited by the balances, and their polarity having been established, they now acknowledged the force of terrestrial magnetism.

Whilst this power in the balance continued, the rate of the chronometer would of course deviate from its original state by the difference which the effect induced by the magnet (and which was now only kept up by the earth) could produce.

The gradual decrease of this polarity is manifested by a gradual decrease in the effect produced on the original rate.

We now proceed to lay before you the rates of these several chronometers, which have been taken at the Royal Observatory with the greatest care. As far as possible they have been compared at equal intervals of twenty-four hours, so as to produce the true daily rate.

In those cases where this has not been attended to, the proper allowance has been made, and the rates reduced to one common epoch. The thermometer is added, and the maximum and minimum obtained from the Royal Observatory records for each day have been preferred to the registered degrees usually made at the time of comparison.

Day of Month.	CHRONOMETERS' RATES.				THERM.		REMARKS.
1833.	No. 657	615.	605.	606.	Max.	Min.	
	m. s.	m. s.	s.	s.	°	°	
Jan. 16	— 9·1	— 8·1	—0·1	—2·9	40	35	
17	9·4	8·1	+0·3	3·3	40	35	These are the rates of the chronometers previous to the application of the magnets.
18	8·5	7·4	0·1	2·5	39	34	
19	8·5	6·7	0·1	3·2	36	33	
20	7·4	7·6	+0·2	3·3	38	27	
21	7·2	6·9	—0·4	3·1	33	26	
22	7·3	7·1	+0·4	4·0	32	23	
23	+ 14·7	+ 3·2	—0·2	3·6	35	20	The magnets were here applied at a distance of 7 inches from the chronometers in the following order:
24	16·5	3·5	+0·2	3·1	36	24	
25	20·0	0·3	0·1	2·9	33½	24	Magnet A, south end to 6hrs of No. 615, and north end to 6hrs of No. 605.
26	18·6	4·3	0·2	3·3	39	29	
27	12·1	3·8	0·4	2·9	41	31	Magnet B, south end to 6hrs No. 657, & north end to 6hrs No. 606.

Day of Month.	CHRONOMETERS' RATES.				THERM.		REMARKS.
1833.	No. 657.	615.	605.	606.	Max.	Min.	
Jan. 28	+34·35·8	+ 11·4	0·9	2·6	43	36	The distances of the magnets decreased to 3 inches. Order of position as before. * The centre of the bal. was found to be below the line of the axis of the magnet. It was therefore raised the required quantity.
29	38· 3·4	12·7	* 1·0	2·6	40	35	
30	39· 3·7	15·5	0·9	3·1	37	35	
31	38·27·3	+1·13·0	0·8	3·0	36	28	
Feb. 1	39·15·0	1·17·5	+1·2	3·0	36	32	
2	35·54·4	1·16·2	−0·5	4·3	52	30	
3	37·20·7	1·12·0	+0·3	3·4	50	31	
4	− 4· 5·3	− 4·7	−1·1	4·3	54	39	Order of position chan. Magnet A, south end to 12^{hrs} No. 615, & north end to 12^{hrs} 605. ..B, S. end to 657, N. end to 606. Distance of Mag. 3 in.
5	1·14·2	3·8	1·6	4·7	54	49	
6	8·49·0	4·4	1·1	4·4	50	48	
7	4· 4·2	4·9	0·5	4·5	56	44	
8	3·48·8	5·4	1·0	4·7	53	42	
9	3·20·5	4·0	1·6	4·0	45	38	
10	13· 8·0	3·8	1·7	4·7	47	34	
11	+ 5· 2·0	+ 4·6	1·8	4·0	52		Order of position chan. Magnet A, south end to 9^{hrs} No. 615, & north end to 9^{hrs} 605. ..B, S. end to 657, N. end to 606. Distance of Mag. 3 in
12	8·23·3	6·0	0·9	4·7	53	39	
13	8·20·0	6·2	1·0	4·0	51	39	
14	5·47·2	8·0	1·8	5·0	48	40	
15	5·42·0	10·5	1·6	5·0	42	35	
16	+ 5·43·6	+ 5·3	1·7	4·6	42	29	Order of position chan. Magnet A, south end to 3^{hrs} No. 615, & north end to 3^{hrs} of 605. ..B, S. end to 657, N. end to 606. Distance of Mag. 3 in.
17	4· 0·7	5·3	1·7	5·9	50	31	
18	5· 3·7	6·4	1·6	5·8	46	36	
19	5·11·5	6·0	1·5	6·0	46	35	
20	9·17·2	7·1	1·9	5·8	44	40	
21	− 7·2	− 6·8	1·7	5·3	46	38	Magnets removed.
22	7·0	6·3	1·0	6·0	44	38	
23	7·3	6·5	1·3	5·8	43	35	
24	7·0	6·0	1·3	5·7	47	30	
25	7·1	5·4	1·7	5·0	48	35	
26	6·8	6·0	1·0	4·7	50	35	
27	6·4	6·0	1·2	4·8	48	35	
28	6·4	6·1	0·5	4·0	46	31	
Mar. 1	6·5	5·3	0·0	4·0	47	34	

The fact, then, of the ill effects produced by the usage of steel in the balance and spring being established, we will shew how far the evil is felt on each of them respectively. The chronometers employed on this occasion were well calculated for the purpose, as will be seen by consulting the few daily rates given previously to the application of the magnet.

The same process has been adopted in these as in the other experiments. The utmost care has been taken in comparing the chronometers; in fact, no error of $0^s,1$ can in any one instance have arisen.

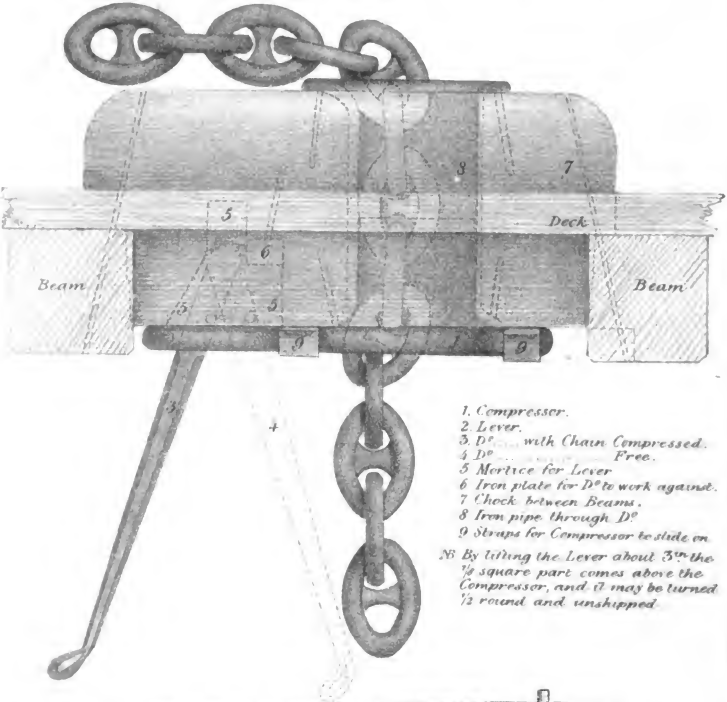
The particular construction of these chronometers has been already explained—it may, however, be advisable again to state, that any change produced in No. 600 by the interference of the magnet is to be attributed to the steel spring, and in No. 274 to the steel balance. As might be expected, the effect of the magnet on the chronometer with the steel spring is by no means proportionate to that with the steel balance, which indicates changes quite analagous to those explained in the rates of chronometers 615 and 657.

Daily Rates of Messrs. Arnold & Dent's Chronometers, 1833.

DAY.	Chrn.600 Bar. C.	Chron. 274. Bar. C.	REMARKS.
	s.	m. s.	
Jan. 17	+ 0·1	+ 1·0	Rates taken previous to the application of the Magnetic Bar.
18	0·1	1·0	
19	0·3	1·5	
20	— 0·6	1·6	
21	+ 0·1	1·5	
22	— 0·1	1·3	
23	+ 0·1	1·7	
24	— 0·1	1·5	
25	— 0·9	1·2	
26	— 1·2	1·3	
27	— 0·8	1·2	
28	— 0·5	1·3	
29	— 1·2	1·0	
30	+ 3·3	+2·53·0	Magnet C, north pole to 6^{hrs} of 600.
31	2·5	3·10·7	.... south .... 6 of 274.
Feb. 1	3·3	2·56·3	Distance of bar=3 inches.
2	4·0	2·38·5	
3	3·2	2·39·0	
4	— 2·0	— 11·2	Magnet C, north pole to 12^{hrs} of 600.
5	3·3	4·8	.... south .... 12 of 274.
6	3·3	4·9	Distance of bar=3 inches.
7	3·7	6·3	

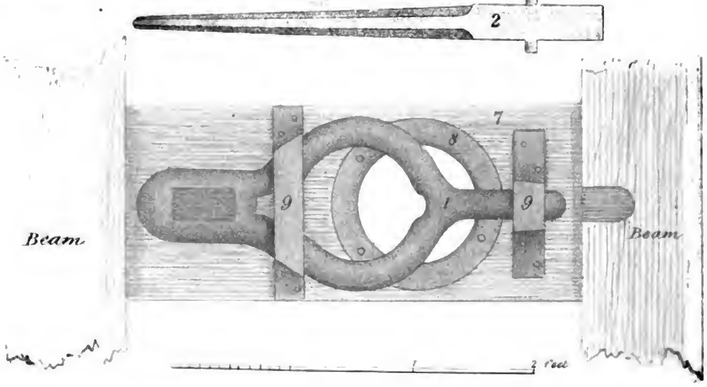
DAY.	Chrn.600 Bar. C.	Chron. 274. Bar. C.	REMARKS.
8	+ 0·8	+ 10·5	Magnet C, north pole to 9^{hrs} of 600.
9	0·6	10·0	.... south .... 9 of 274.
10	0·7	10·5	Distance of bar=3 inches.
11	1·0	10·5	
12	1·2	10·3	
13	1·0	10·8	
14	1·1	17·2	
15	1·1	17·3	
16	— 1·4	+ 21·0	Magnet C, north pole to 3^{hrs} of 600.
17	2·0	20·0	.... south .... 3 of 274.
18	1·2	20·8	Distance of bar=3 inches.
19	0·8	20·0	
20	1·0	12·9	
21	1·2	20·3	
22	1·2	20·7	
23	0·8	20·3	
24	0·8	20·4	
25	— 0·6	+ 2·7	Bar removed.
26	0·3	2·5	No. 274, 6^{hrs} to north. s.
27	0·5	3·5	...... Mean rate for 3 days=2·9.
28	— 0·5	+ 1·5	
March 1	0·8	2·0	
2	0·9	1·7	...... 6^{hrs} to south. s.
3	1·0	1·8	...... Mean rate for 5 days=1·5.
4	1·0	0·5	
5	— 0·6	+ 2·5	
6	0·5	2·7	...... 6^{hrs} to north. s.
7	0·4	3·0	...... Mean rate for 3 days=2·8.
8	— 1·0	+ 1·5	
9	1·2	1·7	...... 6^{hrs} to south. s.
10	0·7	1·8	...... Mean rate for 3 days=1·6.
11	— 0·7	+ 3·1	
12	0·6	3·0	...... 6^{hrs} to north. s.
13	0·8	2·7	...... Mean rate for 3 days=2·9.

On the removal of the bar, the rates of No. 274 were taken in different positions with respect to the north and south points of the horizon. The sensibility of the chronometer to be affected by these variations in its positions is very evident, and immediately corroborates an assertion which we made of this kind in the first part of our letter. Taking the mean of the three positions, CHAIN CABLE COMPRESSOR, invented by RICHD BONNIWELL, 1829.



1. *Compresser.*
2. *Lever.*
3. *Do ...... with Chain Compressed.*
4. *Do .... Free.*
5. *Mortice for Lever*
6. *Iron plate for Do to work against.*
7. *Chock between Beams.*
8. *Iron pipe through Do*
9. *Straps for Compressor to slide on*

NB By lifting the Lever about 3in the ½ square part comes above the Compresser, and it may be turned ½ round and unshipped.



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ished for the Proprietors of the Nautical Magazine by Fisher Son & Co 1st May 1833

with the six hours to the north, which equals $+2^s,9$ per diem, and the mean of the two positions with the six hours to the south, which equals $+1^s,5$ per diem, the difference produced by these changes amounts to $1^s,4$.

We trust it will be unnecessary to intrude any farther on your time in endeavouring to establish the point we set forth with, that magnetism affected the rate of a chronometer. We have not worked out our results by any abstruse formula, as the experiments required no such assistance. The simple matter of fact is here stated, and if we have not succeeded in fully developing our plans and modes of proceeding, we venture to hope that the novelty of the experiments, together with the extreme difficulties which always attend innovations on an old established principle, may be our sufficient apology.

With every acknowledgment, Mr. Editor, for the attention which our experiments for the improvement of science have met with at your hands, we beg leave to subscribe ourselves,

Your very obedient servants,

ARNOLD & DENT.

V.—COMPRESSOR FOR CHAIN CABLES, INVENTED BY MR. BONNIWELL.

To the Editor of the Nautical Magazine.

SIR—Should you deem this plan of a Chain-Cable Compressor,* invented by me in 1829, worthy of a place in your useful miscellany, you will oblige me by its insertion.

It is simple in its construction, but trial has proved it most effectual in its operation; therefore I will not enlarge on its merits, farther than by sending you Captain Waldegrave's report, after repeated trials on board H.M. ship Seringapatam, in which ship it was fitted in 1829, and continued in use till her return home in 1832.

Captain Waldegrave states, that he "has no hesitation in recommending it as the best compressor in use; its power is so great, and it can be applied with such ease and safety to the men, as to render it far superior to all others."

I am, Sir, your humble servant,

RICHARD BONNIWELL.

Model-room, Somerset-House, March 15, 1833.

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* See plate at commencement of this number.

VI.—A Nautical Meeting.

The town of Gosport has long been a favourite abode of naval officers, to whom its immediate vicinity to our principal naval arsenal renders it peculiarly convenient. It was customary some years ago, in the course of the long war, when the news of any naval victory was received, that the wives of those officers who had come off victorious after an action assembled together to celebrate and rejoice at their husbands' success. On one of these merry-making occasions, my grandmother was invited to the lady's house of a captain on a foreign station, who had just sent home a rich prize. The evening arrived; the weather was remarkably fine; the distance to the house was not great; and there was nothing to render any mode of carriage-conveyance necessary, more particularly as there was a way through a narrow alley that shortened the distance considerably. Every thing was ready; the time came for setting out; and forth sallied my grandmother, attired in her best silk gown, of wonderful dimensions; her head, careful soul, mysteriously enveloped in a huge calash.

It happened, just as she had reached the middle of the alley, intent on the pleasures of the evening, at her friend's abode, to which she was hastening with due regard to punctuality, that a gallant son of Neptune was shaping his course through the same passage, but in the contrary direction, to join his boat. Jack was quite happy, he had been drawing on his prize-money, and drinking success to his favourite *barkey*, which was never yet outsailed by any ship that swam on the ocean, and the health of his brave captain had been pledged in more glasses than he could well carry. Probably he was a cloth or two in the wind, to use his own expression, or was not far from being what is vulgarly denominated drunk, although he would never allow that he was so yet. It was as much as he could do to make a straight course of it down to his boat—indeed, the wall on each side was of much service in keeping him in the right path. Jack, however, was not so far gone as to be unable to keep a look out ahead, and the sudden appearance of a handsome and elegantly dressed woman before him, acted like an electric shock on Jack's manners. "Avast heaving there," says he, placing himself in the middle of the passage, and holding out one hand, while the other rested against the wall, to preserve his equilibrium. A moment's pause ensued, till at length, recovering from his surprise, Jack hiccuped out, "be-a-u-tiful, by ——; be-a-u-tiful—must have a kiss, 'pon my soul."

By the time that Jack had passed this resolution, my grandmother had just reached the part of the passage where he had placed himself, and would fain have passed him by; but seeing Jack's determination to stop her, she carefully retreated a step or two. In vain was it that she first tried one side and then the other, endeavouring to take advantage of Jack's unsteady condition. All would not do, the silk gown was too stiff, and took up too much room, besides the calash was most unaccommodating for a narrow pass, and a brush on either side would have disarranged the mystery of bows and ribands in the interior, which it was intended to preserve. A short parley now ensued between the two. My grandmother was by no means offended with Jack for admiring her person, but was at first indignant at his rude demand, and had no intentions of a salute from such a jack-tar, as she termed him. Time, however, was of importance; to have retreated, and gone by another path, would have made her late; so, finding that Jack was inexorable in his demand, she made up her mind to comply with it, and prepared for close quarters. Gathering up the skirts of her gown with one hand, that they might not come in contact with Jack's dingy trowsers, while the other preserved the equilibrium of her calash, she resolutely projected her face from its snug retreat, and allowed Jack to bestow a hearty good kiss on her yet rosy cheek; for my grandmother was not so far on the down-hill of life as the title generally implies. Our jolly tar was as good as his word, and permitted her to pass, bestowing on her all the encomiums he was master of, while he kept sight of her as long as he could. The scene had afforded, as it well might, no little amusement to some persons who had witnessed it. The happy and contented physiognomy of Jack's countenance, and his admiration of the fair object before him, contrasted with her disconcerted manner, and anxiety to get away from him, was highly entertaining. In this happy state Jack managed to find out the way to his boat, and related the manœuvre to his shipmates; and my grandmother amused her friends often after by relating the adventure, and shewing them the exact position in which she obtained her passport through the alley.

VII.—*Further Remarks on the Effects produced in Ship's Bottoms by the Teredo navalis, &c., by Mr. Willcox, of His Majesty's Dockyard at Portsmouth.*

On inspecting His Majesty's ship Galatea, docked at Portsmouth in January last, some of the copper was found to be rubbed off; in consequence of which several planks of the bottom had been exposed to the attacks of *marine animals.* Their devastations have often been recorded, but the instance of their attack on the bottom of this ship is deserving particular notice.

The external appearance of the planks, which were slightly rubbed, had scarcely any visible signs of being perforated by the *teredo,* in consequence of the first entrance of the animal being generally not larger than a pin's head, but always increasing in size as it advances. It was therefore necessary to dub, or slice off the exposed surface, to ascertain the extent of damage which the bottom had sustained; and it was then found necessary to remove five of the planks next to, and above the keel, on the larboard side, abreast the foremast, the perforations in them being so extremely large and numerous.

It may here be observed, that, although in the course of my duties I have had to superintend the repairs of defects occasioned by these animals,* yet I have never witnessed any that evinced more clearly the danger to be apprehended from them, than in the instance of their attack on this ship. I have invariable found, on examining defects occasioned by the *teredo*, that the perforations approached the inner surface of the plank to within even the thickness of a wafer. Those of the *teredo gigas* were three-quarters of an inch in diameter, a size surpassing any I have ever seen in ships' bottoms; and it is worthy of remark, that not more than one animal of a hundred is found alive after a ship has been in this harbour three or four months; a circumstance which goes far to prove that the water of this harbour has a tendency destructive to their existence.

The *teredos*, being more particularly natives of tropical climates, it may be supposed have attached themselves to the exposed part of the bottom of the Galatea while that ship was in the Indian seas. From my own observations, I am induced to believe that this species of animal is but rarely naturalized at, or near this port; one solitary instance only having been discovered by me, in some sunken timber, which is to be seen at the lowest run of the tide between Southsea Castle and Lump's Fort. This timber is also perforated by the *Pholas dactylus*, and in a few instances by the *Pholas crispata*.

The place above mentioned has often been visited by the curious, for the purpose of examining the timber alluded to, which appears to have grown on the site where it now lies. I have examined the whole of it many times with much care, and a notice of it may not be uninteresting.

This timber consists of the remains of roots, and large portions of the trunks and branches, of different trees, such as the *pear*, *apple*, *walnut*, *&c.*, and, from being materially altered by decomposition, may be supposed to have lain in this place for many ages. The largest trunk can easily be cut through by half a dozen chops of an axe. The girth of the trees is from one to five feet: there are many roots which have no appearance of having been disturbed, from which circumstance it may be supposed that the trees had been felled. The space occupied along the shore by them is one hundred and thirty yards long—they are to be seen only when the tide runs low, the trunk nearest to highwater-mark being one hundred and twenty feet from it. From this trunk to the very lowest run of the tide, which is often fifty feet more, the timber may be seen lying about in all directions, imbedded in a mass of decayed vegetable matter. The perpendicular rise of spring-tides at this place is sometimes fifteen feet, from which some idea of the declivity of the beach may be obtained.

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* His Majesty's ship Hyacinth had four perforated planks of the bottom shifted about a month prior to the repair of the Galatea.

Various conjectures have been entertained respecting this formation, but in my opinion the most reasonable conclusion is, that it was formerly an orchard, and has been removed by what geologists term a *slip*, or that it has been overwhelmed by the advances which the sea has been making on these shores for some years past.

VIII.—A Sailor's Advice to his Son,* on Entering the Royal Navy.

(Continued from page 220.)

Letter VII.—*On Exercises and Amusements, concluded.*

From the foregoing subject, I turn with pleasure to amusements, the exhilirating tendency of which unbend the mind and invigorate the body. No popular adage is more correct than that which says, "all work and no play makes Jack a dull boy;" and it is at all times agreeable to see a young man as habitually expert in feats of activity as in intellectual talent. To the hours of study always devote serious, intent, and methodical attention of mind; to the hours of recreation, lend the gay, gallant, and playful nimbleness of the body; and without looking assiduously for it, address in the former will naturally come to the aid of the latter. If you have excelled at school in cricket, marbles, fives, &c. you will enter with pleasure into the same, or similar games, in manhood. Cricket, as you have previously known it; fives, converted into tennis; and marbles into billiards. To attain proficiency in them requires a quick eye, a calm temper, a steady hand, and an active person. Billiards is particularly the game of the gentleman and man of science; and if well played, affords as much interest to the spectator as to the player himself. It is, however, too fascinating, and can be too easily resorted to. I remember some years ago attending regularly at a stated hour the parade billiard-rooms at Portsmouth, to witness a daily match between two officers of marines, whose superlative skill, command of temper, and courteous deportment towards each other, exhibited a perfect specimen of the game. In private families it is of course conducted with the same regard to genteel and polished manners; but as public billiard tables will perhaps fall chiefly within your present reach, it is necessary to caution you that they are sometimes of a disreputable description, and that you should avoid playing on them with strangers.

Quoits afford excellent practice for combining the movement of the hand with the direction of the eye; for poising the body in conformity to the will, and for bracing the muscular elasticity of the arm. Chess is a noble invention of rational and amicable contest between intellectual powers, and concentrates within a very small compass the properties of stratagem, calculation, caution, and detail: the possession it takes of the mind is perhaps deeper than billiards, and its operations are far more diversified. A knowledge of chess will make your society welcome to others, while it affords you satisfaction. Cards and games of chance, partaking of a mixture of certainty and chance, such as backgammon, faro, monte, rouge et noir, &c. I by no means recommend, excepting of the former such games as whist, piquet, or cacino. Whist in particular requires an accurate knowledge of the power of the cards, a clear memory, long practice, and a good partner. But however skilful you may become in such amusements, you must never consider them as serious pursuits, but look on them as merely agreeable trifles, to fill up leisure time *in society*. Avoid, particularly, making them subservient to pecuniary considerations. Such a propensity I entirely reprobate, being one which, if once acquired, it is impossible to foresee where it will end. Nothing is more dishonourable, and further from the character of the true gentleman, than a practice of such expedients to replenish the purse.

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* At the age of thirteen.

The benefits to be derived from dancing are—a graceful, easy, and inartificial freedom of attitude, a firm and unhesitating step, and a general embellishment of the whole carriage. Subordinate to these permanent consequences is the animated and pleasurable amusement which it affords to the youth of both sexes; although I am apprehensive that many a forsaken damsel, or neglected wife, may have to lament its once exciting tendency. To pure and polished minds it presents no danger, and you will find it pursued under many diversified modes of elegance and gaiety, wherever you may go: and in some parts of southern Europe, on the shores and islands of the Mediterranean, forming an object of chief consideration to the younger part of the fair sex. Indeed, it is a diversion which prevails both in savage and civilized life, and, however you may hear it decried by the ruder or cynical sons of your profession, it is an accomplishment by no means derogatory to manliness or high spirit. On the contrary, it contributes to the ornament of both, by uniting them with courtesy and politeness towards that lovely part of the creation whose presence commands their homage, deference, and protection. It lightens and enlivens life, affords an elegant enjoyment to all the young, and a cheerful and brilliant spectacle to the aged.

These recreations I consider as the bagatelles of social life, they fill up and harmonize the scene agreeably to others and to ourselves. Those which may be enjoyed either in solitude or sociability, are riding, drawing, poetry, and music.

No young man, endowed with the smallest energy of imagination, can read Shakspeare's description of "young Harry with his beaver on, vault into his saddle like feathered Mercury,'; without longing to be a good horseman, and nothing gives a nobler air to a gentleman than the skilful management of his steed on all occasions; while, on the contrary, nothing renders him more conspicuously ridiculous, even in the eye of the lowest beholder, than an awkward seat on horseback. The very brats of the dunghill will laugh and hoot at him. Stuck awry in his stirrups, as if he were crookedly screwed to his saddle, his knees bouncing on the pummel, and his chin pitching against the crest of his horse like the bows of a ship in a head sea, he appears like a delinquent elevated into the situation of excruciating torture, while the poor beast under him continually smarts and winces at the unmeaning dogging of his spurs. The clever cavalier bestrides his saddle with a spring, fits himself to it with an air of easy *nonchalance*, plays with the mettle, animates or checks the speed, and governs the temper of his horse with a graceful and sportive familiarity, balances his own person at every speed, flies a fence, a gate, or a brook, scours the plain, salutes a lady with perfect ease and delight to himself, his horse, and every spectator.

Such a person as this knows and appreciates the value of the animal; and, blending gentle treatment with resolute command, he disciplines the noble qualities of his horse with such humanity and address, that, while he renders him entirely subservient to his pleasure and recreation, he promotes his health, spirit, beauty, and docility, by the kindest attention to his food and necessary refreshment. Sailors are accounted notoriously bad horsemen; and their mode of life is accepted as an apology for the defect; but there is no reason why an officer should give way to any such notion, and you must neither be daunted by this opinion, nor by a few falls when you occasionally go on shore after long cruises. I shall therefore expect to see you hereafter an expert horseman, following a pack of hounds with as much resolution and security as any Yorkshire squire of your own age. As a retired exercise, riding is a no less agreeable resource; with your horse you need never feel alone in the stillest solitude, and in a beautiful country; whether you possess domains of your own or not, you are master of the surrounding scenery. During the fine evenings of summer, to traverse the mountain and the dell, or to pause on the brink of the lonely lake, surrounded by precipitous rocks and hanging woods—to wander down the dark ravine, or to mount the open hills from whence the rich magnificence of a cultivated country, extended forests, winding rivers, and stately edifices, breaks in boundless profusion upon the view, or to linger with so faithful a companion amidst the humbler scenes of cottage recreation, where browsing herds, prattling children, and home-bound teams fill up the landscape, are severally very pleasing objects to a contemplative mind; and, while the advance of twilight and rising vapours obscure the glowing hues of the western sky, they give birth to many tranquil and elevated feelings of repose and sympathy, which it would be beyond my purpose to portray.

A love of such scenes will, I hope, create in you a desire to exercise your pencil upon them. You will have many opportunities of beholding nature under sublime and terrific aspects, as well as in the serene and beautiful decorations of her infinite variety. The most useful practices of your pencil will be in sketching with a clear, bold, decided, and rapid outline, such headlands and coasts, harbour, sea, and landscape views, as may present themselves to your notice in the course of your different voyages. I do not recommend entering into minutiæ of composition; it is apt to encroach on time which may be far better employed, and which will be too valuable to be thrown away. Nor is oil-painting a suitable occupation for an officer whose duty is the art of governing men, not the pallet, and whose destiny it may be to subjugate the violence of the elements, and preside over the contention of hostile fleets—objects of far higher consideration than portraying their representation on canvass. At the same time you may justly entertain a very high value for the art in its proper place, and you may derive infinite pleasure from those sources of gratification which it contributes so much to enlarge; but clever sketching, and correct mathematical drawing, are the utmost that an officer should attain to in the practice of it: he may make it a pursuit of leisure hours to become acquainted with the theory, in order to estimate such beautiful productions of foreign schools as it may be his good fortune to meet with, but he should never permit it to attract his mind from more essential occupations.

With the sister-graces, poetry and music, I recommend a similarly restricted acquaintance; to possess a well-grounded sensibility to their beauties, but not to drink deeply of either, at least for some years to come. Were it necessary to propitiate an acquiescence in this prohibition from the enamoured votary of the muses, or the warbler of sweet sounds, I could advance very substantial reasons for it—at the same time acknowledging that their united inspirations breathe a pure and perpetual solace around the ills of life, not to be derived from any other human source.

Poetry is the music of the soul; it amplifies, dignifies, and sweetens the perceptions of the mind to all animate and inanimate nature; it disrobes the intellect of earthly grossness, and exalts it to the noblest elevation of thought; it soars beyond the troubled barrier of mortality into regions of calm and holy meditation. In a pure mind, poetry implants a perception of brighter joys hereafter, and developes in radiant colours every source of happiness here; but to the immature enthusiasm of youth it may nevertheless become a dangerous path, it may lead to a disgust of the hourly trials and impediments of real life, and may create an improper bias, and a romantic extravagance of thought; it may inflame the imagination at the expense of sober reason, may render odious the daily littleness of society; it may paralyze every desire of intercourse with it, and, by seducing the mind to retire entirely within itself, may engender an habitual distaste and acerbity towards its fellow-creatures. Poetry of a light description will not do this, and I recommend such to your perusal, in preference to any other of an intense, pathetic, or enthusiastic tone. But her ample dominion of language may likewise be extended over the most instructive subjects. The fervour and pathos of her voice can illuminate virtue, and awaken in youth an appropriate and generous thirst for fame. She can contrast valour with cowardice, martial skill with imbecility, the horrors of war with the blessings of peace, in words of breathing and overflowing eloquence. She can portray heroic fortitude, inflexible integrity, and patient perseverance, struggling against innumerable difficulties for the attainment of some great and noble design, as in the Æneid, Odyssey, Lusiad, and Gierusalemme Liberata. Their respective heroes are of this description of character, and the study of such compositions, rightly directed, is calculated to rouse, to expand, to mature, and circumstantially to guide the laudable ambition of youth; the daring ascendancy of her genius surmounts the loftiest ideas of every noble design; her pathetic sweetness penetrates the inmost recesses of the heart, and rekindles there every dormant spark of heroic emotion. Whether she embellishes fiction, or throws her resplendent illustration over the actual achievements of mankind, we are equally borne along in reciprocal flight, and after she has wielded at will the aspiring passions involving us in all the pride of grandeur, of gladness, and of admiration, she can as effectually reverse the picture. Her sublimer pages are at all times a vehicle of good; they provide an exalted fund of amusement, and while they divert the mind from brooding over many unavoidable ills preferably to every other mode of human relief, they assist in arming it to meet future calamities with patient fortitude. I therefore can safely recommend her to your confidence, when she sits thus enthroned in virtue, and wields her magic sceptre over all that is beautiful, mighty, and majestic in the human mind.

The influence of music in elevating the enjoyments and alleviating the daily disturbances of life, by lulling its cares, its passions, and its follies into calm repose, is perhaps still more instantaneous. Music alone can open every avenue to the heart, and unfold the various treasures with which a beneficent Creator has furnished the susceptibility of his creatures. The most painful ebullitious of grief are stifled, and charmed into tranquillity, by the melody of skilful music. To dissipate affliction, to moderate the anguish of severe disappointment, or to adorn the sparkling moment of felicity, music is equally powerful and efficient; it can quell the agitation of despair, and exhilarate with speechless tremour the heart, while it overflows with delight. Music is the language of those regions where happier and better beings reside, and its sympathy with the fine and tender affinities of our own species, gives it unlimited sway over the modulation of our feelings. The mother's lullaby over the darling in her lap breathes music upon us in our infancy; it affects us in various modes through after-life—in the midnight serenade, in the festive tabor, in the shrill clarion of war, and in the full-toned organ, which reverberates a requiem over the departing relics of mortal existence. Amidst the wildest scenery of nature, music can kindle sensations of humanity in the breast of the most obdurate savage; and among the infinite gradations of civilized life can call down the monarch from his throne, can console the exile under his expulsion, and can elate the breasts of humble peasantry with jocund celebration of their evening repose. In its simplest form, music requires neither skill nor precautionary steps, to find access to the heart—the ploughboy's carol, the milkmaid's ballad, the seaman's ditty, or the recitation of the foreign mountaineer chanted with inartificial melody, produce powerful and pleasing sensations. But to create that intensity of feeling which solely identifies itself with the accordance of musical composition, the corresponding symphony of which awakens from their secluded cells the sweetest and tenderest affections, elucidates emotions of hope, fear, surprise, terror, and joy—and, as the stream of harmony flows along, calls forth involuntary exclamations of wonder, delight, and admiration—demands a much more copious extent of subject and execution. The sublime compositions of Handel, Haydn, Arne, Mozart, and Cimerosa, are of this description.

A natural sensibility to the power of harmony will produce considerable degrees of pleasure, but an acquaintance with musical composition will greatly enhance the more refined feeling which accompanies the performance of such pieces; and should you ever visit that delightful climate which elicits sparks of fiery intellect unknown in our phlegmatic regions, although polluted with impurities of the vilest description, you will still find it universally devoted to the shrine of harmonic idolatry. No good argument in its favour; but it is for a just estimate of its value that I hold it up to your attention, not for an abuse, in which the highest qualities of our nature may be implicated by an effeminate and meretricious people. And, notwithstanding the despicable emasculation of general manners and morals, Italy still retains within herself many inimitable relics of her imperial glory. Her monuments of antiquity will be noble subjects for your pencil; and, in the midst of beautiful and magnificent landscapes, under brilliant and unclouded skies, and surrounded by preeminent remains of architectural splendour, this land of inspiration will instil into your mind a lively recollection of all that you have read of her earlier history. The land of Scipios and Cæsars, of Catos, of a Junius Brutus, a Cicero, a Virgil, a Trajan, and an Antoninus, will rise before you, exciting new and unforeseen causes for self-emulation, and, under a serenity of soul of which at other times you will be unconscious, will whisper unto you in those still and gentle accents which elevate the thoughts into awful contemplation, and purify the springs of every sentiment in an enlightened mind. The same observations are applicable to that country whose more remote annals of sages, heroes, and poets, are read by our youth, and remain with them in manhood and decrepitude.

I have extended my observations on the subjects of this letter, because, although they are of but secondary moment, they are still so closely connected with the primary pursuits pointed out in my sixth letter, that they contribute most essentially to render them even more valuable. Still you must bear in mind, that knotting, splicing, reefing, heaving the lead and log, and laying out manfully on the mizen topsail-yard, giving a quick relief, being the first at your station whenever all hands or quarters may be called, keeping correct watch and quarter-bills, taking good astronomical observations, and working them expeditiously and correctly, must be the objects of your present ambition, in preference to blowing your flute, or even to using your pencil. These, however, may fill up some portion of your spare time, and by adopting them now, they may become a source of much gratification hereafter to yourself and others, by enabling you to bring home to your sisters and your friends the national airs and music of foreigners; and, by your future fireside, to open a portfolio filled with delineations of many a scene of former interest and importance.

The mariners of those vessels which navigate the Mediterranean Sea always sing in concert with the guitar, and, although to our rough tars it may seem to be an effeminate occupation, it is nevertheless a better pursuit than the roaring of bacchanalian intoxication, accompanied with black eyes. On a still evening, when calm, clear, and unruffled, the azure transparence of the sea glows beneath the milder beams of a retiring sun; when every light and lofty sail just sleeps in its concave form, and silently the prow divides the rippling water, to take a station in some retired part of the upper deck, and, leaning over the rows of ponderous artillery beneath, to hear among the surrounding vessels the plaintive chorus rise from some unseen little barque, awakens a train of reflections too elevating to be reprehensible. Having expatiated on music as the embellishment of public, and the charm of private life, I must not omit to suggest to you, that, in animating the fervour of devotion, and in lifting the soul to its purest capacity of adoration, during the worship of an Almighty Creator, it possesses a much more important influence over mankind. In those moments when the humble penitent feels that he is in presence of, and in communion with, his Maker—when desirous of supplicating divine grace and protection against future temptation with a pure and contrite heart, yet conscious of manifold transgressions, and shrinking at the reflected image of past unworthiness, he trembles before the awful attributes of the omnipresence, the omnipotence, and the eternal justice of his Maker, and sinks absorbed in desponding trepidation, the solemn cadence which rises from the sacred oratory is powerfully calculated to infuse composure and confidence, and to elevate his mind to a higher conception of all his momentous duties.

(To be continued.)

WORKS OF NAUTICAL AND GEOGRAPHICAL SCIENCE AND ART.

BOOKS, CHARTS, INVENTIONS, ETC.

PRACTICAL METHODS, by trial and error, of finding the Latitude and Time at Sea, by THOMAS LYNN, late Commander in the Naval Service of the East India Company, &c., and sold by himself at 34, Trinity-Square, London, and Messrs. Parbury, Leadenhall-street.

This little tract on finding the latitude and ship time at sea from two observed altitudes of the same or different heavenly bodies, and the interval between the observations measured by a watch or chronometer, is well worth the notice of our naval readers who delight in pursuing the theory and practice of Nautical Astronomy. The following is an outline of the process of calculation recommended by Mr. Lynn; for particulars we refer them to the tract itself:

A latitude is assumed; and with this the declination of the body, and the observed altitude, the hour-angle is computed in time, in the same manner as in working for a chronometer. This is done for each altitude, and thus is known the interval elapsed, which is the difference or sum of the hour-angles. If this computed interval beequal to that noted by the watch, the assumed latitude is considered as the true latitude; if not, a second assumed latitude is used in a similar manner. Thus is determined the change in the computed interval produced by an assumed alteration in latitude, as 1°. Then, by a simple proportion is deduced the alteration in latitude, corresponding to the difference between the interval, or time elapsed, first computed, and the true interval measured by the chronometer—this alteration in latitude applied to the first-assumed latitude, gives the true latitude, or nearly so. A second operation of a similar kind, if necessary, finishes in general the work.

By a second simple proportion, the *true* hour-angle, corresponding to the altitude farthest from the meridian, and the *true* latitude, is deduced, and thence the ship time.

The above mode of computing the latitude at sea may in many instances prove very useful, especially to those naval men whose stock of knowledge in Nautical Astronomy does not extend farther than working out an hour-angle for the chronometer; and we should do an injustice to Mr. Lynn's labours as a writer and industrious calculator of tables on Nautical Astronomy, if we did not recommend a trial of his rules to our naval friends.

We must not omit, however, (for justice to the seaman requires the remark,) that Mr. Lynn seems to have forgotten, or mistaken, the limits of bearing under which two altitudes *observed at sea with common instruments* may be *safely* applied to the calculation of the latitude. Under very many circumstances, a slight error in the altitude will produce (under any mode of computation) a very large error in the latitude. To avoid this danger, writers on Nautical Astronomy, particularly D'Entrecasteau, (see his Voyages,) has fixed the limits nearly as follows:

On the same side of the meridian, the greater bearing should be twice the less, at least. On different sides of the meridian, what the greater bearing wants of sixteen points should be twice the less bearing at least. The less bearing should not be greater than three or four points.

If the seaman will attend to these limitations, we think his result may be depended on generally within 5′ or 10′; but if he does not, he may fall very easily into an error in critical circumstances, not seldom a fatal error, of half a degree or more.

Mr. Lynn observes in page 3, art. 9, that "this method is confined to no particular limits of time." Now, the seaman, by taking two altitudes of the sun, bearing nearly east or west, at an interval of 10 minutes, may easily prove the correctness or the contrary of this assertion, by first calculating the latitude from his altitudes as they are, and then altering one of the altitudes 3′ or 4′, no unusual error of altitude observed at sea. The scientific navigator may do the same, by recollecting that

$$\textit{Error in latitude} = \textit{error in altitude, at}$$

$$\textit{One bearing} \times \frac{\textit{sine of other bearing ;}}{\textit{sine difference of bearing ;}}$$

from which formula he will see, that, supposing the bearing not to change more than *half a point* in the elapsed time, which, under such circumstances, might often be the case, the error in latitude corresponding to an error of 1′ in altitude would be about 10′; of 2′ would be 20; or 3′ would be 30′; and so on: the sine of ½ point being about 0·1, and the sine of bearing about 1.

The other rules given in the tract for computing the latitude from meridian altitude are quite common, and require no farther notice from us than this,—they are neatly printed, with well-arranged examples.

CHARTS.

The Harbour of San Francisco, in Nueva California, by Capt. F. W. Beechey, R.N. F.R.S., 1827-8. Size, 12, by 9½ inches. No. 1137, Admiralty, March, 1833.

This is a part of the fruits of the Blossom's memorable voyage, when she went to Bhering's Straits, with the double purpose of meeting the arctic expeditions of Parry and Franklin. It will be found a useful little chart, as it includes the whole of the extensive inlet of San Francisco, celebrated in almost every narrative of voyages in the Pacific. The entrance is given on an enlarged scale, with a good view of it, besides several views as leading marks to avoid the different rocks.

Heyow, the Bow Island of Captain Cook, and La Harpe of M. Bougainville, by Captain F. W. Beechey, R. N., F. R. S. Size, 16 by 11 inches. Admiralty, March, 1833, No. 2341.

Another of the fruits of Captain Beechey's voyage, and one of a most interesting kind to geologists, inasmuch as it gives us an accurate delineation of one of those curious islands of the low archipelago in the Pacific ocean, where the works of coral animals are in constant progress.

The present plan will enable future geologists to ascertain the progress of this island, and thereby to arrive at some curious facts relating to them in general. With this view, we should have been better pleased to have seen the lagoon in the interior of the island studded well with soundings, as well as a few coral patches. The entrance, however, which is on the NE side of the island, is well provided in this respect, and is given on a scale sufficient to enable a vessel to enter it, and the view attached conveys a good idea of it.

Cockburn Sound and the Entrance of the Swan River, by John Septimus Roe, Surveyor General. Size, 18 by 23½ inches. Admiralty. No. 2148.

Several important additions have been made to this plan, in the shape of soundings, and the position of the Casuarina shoal has been materially altered. Numerous soundings have also been introduced to the northward of the parallel of Carnac Island, and the dangers in the vicinity of the Gage's roads more distinctly shewn, as well as more fully sounded. No alteration has been made in the coast line or the banks of the river, but several soundings have been placed off Freemantle.

The New Nautical Almanac.

CHANGES IN RULES OF NAUTICAL ASTRONOMY.

(Continued from page 226.)

Longitude by Chronometer.

18. The Greenwich date in mean time should be got from the chronometer time corrected by its error on Gr. mean time (Art. 6;) and from a consideration of the longitude by account, which will determine the proper astronomical day, and the necessary addition or not of 12ʰ. To this Greenwich date the elements wanted from the Nautical Almanac are taken out as explained in the Articles above, and the *hour angle* of the heavenly body observed is computed as usual. If the body be the sun, apparent time is got from the hour angle as usual, and then corrected for the equation of time taken out of the Nautical Almanac (II) for the Greenwich date, adding or subtracting according to the directions at the head of the column. The result will be ship *mean time*, the difference between which and the Greenwich date in mean time, will be the longitude in time.

19. If the body observed be *not* the sun, the hour angle is added to the R. A. of the body, when W. of meridian; and subtracted when E. (adding 24ʰ if necessary.) The result is the R. A. of the meridian, from which (increased if necessary by 24ʰ) subtract the *sidereal time at mean noon* taken out for Greenwich date; the result will be ship mean time: with which proceed as in 19.

Longitude by Lunar Observation.

20. The Greenwich date in *mean time* being got, if possible, from a chronometer (Art. 6;) if not, as explained in Art. 5; take all the required elements from the Nautical Almanac as explained in the above articles. Clear the distance as usual, and get from the *true dist.* Greenwich time, which, according to the new Nautical Almanac, will be *mean* time. Having got ship *mean time* from one of the altitudes supposed to be observed as explained in Art. 19, 20, the difference will be the longitude.

21. When a lunar distance is considered as a means only of determining the error of a chronometer on Greenwich mean time, which, generally speaking, is the best way of considering it; then the difference between the Greenwich time got from the *corrected* or *true distance*, and the time shewn by chronometer at observation, will be that error.

22. This error being thus determined, (corrected by rate if necessary,) and used in finding the longitude by chronometer from altitudes taken before or after the distance, the result may be considered as the longitude by lunar observation, till a fresh opportunity occurs of finding a new error in a similar manner.

Computing the Altitudes instead of Observing them.

23. In this case the error of a chronometer or watch on ship mean time is supposed to be found from altitudes of bodies advantageously situated, either before the distance is observed or afterwards, so that *ship mean time* is known from the chronometer or watch.

24. *Sun.*—A Greenwich date in mean time being got as explained in Articles 5, 6, take from the Nautical Almanac the *equation of time* corresponding to it. Correct ship mean time by this equation of time, subtracting when the Nautical Almanac directs it (II) to be added to apparent time, and adding

where the directions are to subtract. The result will be ship apparent time. When the sun is W. of meridian this will be the *hour angle* in time; when E. of meridian, subtract it from 24h, and the remainder will be the *hour angle*.

25. *Any other body*.—For Greenwich date in mean time take out *sidereal time at mean noon*, and the R. A. of the body. Add *ship mean time* to *sidereal time at mean noon* (rejecting 24h if sum be greater than 24h;) the result will be the R. A. of meridian; from which, and R. A. of body, the hour angle required will be obtained as before.

The other part of the computation will be the same as in the common rule.

(To be continued.)

ROYAL GEOGRAPHICAL SOCIETY, LONDON.

THE President and Council give notice, that his Majesty's Annual Premium of Fifty Guineas, "for the promotion and encouragement of Geographical Science and Discovery," will be awarded, from time to time, to such important original communications as may be sent to the society, and considered worthy of that honour.

The following, among other subjects, fall within the scope of his Majesty's gracious donation:—

1. New or improved Surveys of any important tract of country, being either out of Europe, or in a part of Europe as yet imperfectly explored.
2. The discovery of any ancient site valuable for its remains or classical associations, if accompanied by a description sufficiently illustrated by plans or drawings.
3. A Manual, detailing—
    - (*a*) The principal object to which every traveller desirous of advancing geographical knowledge should direct his attention.
    - (*b*) The most accurate and portable instruments, and the readiest processes, by which, in whatever circumstances a traveller may be placed, he may be enabled to measure elevations and distances, determine positions, and observe magnetical, meteorological, and geological phenomena; with a series of tables and formulæ for registering observations.
3. An exposition of the actual state of geography in its various departments, shewing what remains to be done in order to give the science all the exactness of which it is susceptible.
4. A series of geographical tables, shewing all the names by which the several places, rivers, lakes, mountains, &c., in any country of considerable extent, have been known at successive historical epochs; with the correct mode of writing each name, and its signification, as far as the same can be obtained.
5. A comprehensive memoir, suggesting new methods of constructing, drawing, and engraving maps, with a view to increase their precision and distinctness, and give greater scope and expression to topographical delineation.

Candidates for the royal premium are requested to send their names under seal.

IMPROVEMENT OF THE HARBOUR AT LIVERPOOL.

To the Editor of the Nautical Magazine.

SIR,—The importance which Liverpool now assumes in the commercial world, is the subject of daily observation; and a desire to add, if possible, to the rising greatness of my native town, is the reason of my now addressing you. It has often been the subject of consideration, how to make the approaches to this harbour more accessible, and several schemes have been agitated, but none of them have ever been carried into effect. One of them (if I remember rightly) was to form a canal from the mouth of the Dee, or between the Lizza* and Lake Lights, to connect itself with the Mersey in Wallasey Pool; the latter of the two situations, I should suppose: but being considered likely soon to choak up with sand, &c. the idea was therefore abandoned. It is well known to all nautical men, that the depth of water prevents vessels above a certain tonnage from entering the harbour; and which necessarily excludes the larger class of vessels of his Majesty's navy, as well as the vessels belonging to the East India Company, if they should feel disposed to open an establishment here, of which an intimation has recently been given in the public prints. The Formby channel is decidedly the best entrance into the harbour, being the broadest, and having the greatest depth of water; but the entrance into it is not good. However, it appears to me, from the great tendency which Jordan's Bank at the entrance into this channel has to alter its position, *that if a sea wall was run along the edge of the Burbo Bank*, the Jordan Sands would be gradually swept away by the force of the tide, or, if not entirely removed, that it would be forced so far back upon Formby Point as to leave a fine bold inlet, rendering the harbour accessible to vessels of any tonnage, and at almost any time of tide. Within the last few years, the tide has taken another range in this channel, having forced a passage in another direction; and a comparison between the original and the more recent surveys of Lieut. Evans, will at once shew how great the tendency of Jordan's Bank is to shift itself: which bears me out in the supposition, that if a wall was built in the situation before-mentioned, a fine bold entrance would be produced free from every obstacle, and of course render the intricate rock channel of little or no use.

There are many persons here who would treat the idea as chimerical; but to those who are doubtful that such a work could be accomplished, I would say, Look at Dublin bay, in which a work as nearly similar as possible has been accomplished. The expense would be another *mighty* consideration; but the value, in the event of a war, of Liverpool as an open harbour, to the State, as a northern rendezvous for vessels of war cruising in the channel, would be most important; and had such an entrance existed, how many valuable ships and cargoes, and, what are of infinitely more consequence, how many lives would have been saved, that have met with destruction on the Burbo, or East and West Hoyle banks. And another decided advantage would be, that of vessels having a harbour of shelter to run for, in case of being taken aback by westerly gales, which is so often the case; for was Formby the principal entrance, the excellent harbour of Pile a Fouldrey would be open to receive vessels so circumstanced, and which has fifteen feet water on the bar at two hours' flood, and the rise of the tide is nearly double there what it is at Liverpool. The present time appears favourable to obtain an opinion of the practicability of the proposed undertaking, as it is rumoured that Lieut. Denham, of the navy, is either about to commence, or has commenced, a survey of the harbour; and as our corporation and dock trustees have ever shewn a desire to encourage any plan conducive to the welfare of the port; if the subject was brought before them, I entertain no doubt of their affording every assistance in their power. I shall not, in the present communication, enter more fully into the subject, or endeavour to point out the advantages that must, as a natural consequence, follow to the port of Liverpool, with all but an open harbour, either in a national or local point of view. The idea floated into my imagination, on looking at the alterations in the entrance to the Formby channel, through Jordan's Bank. Should you pronounce a favourable opinion of my suggestion, and it find a place in the columns of your work, I may trouble you again on the subject. In the mean time, I beg to subscribe myself your obedient servant,

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* Leasowes in the chart.

A LIVERPOLIAN.

Our correspondent has taken a bold view of the matter, and has marked out a tolerable job; the distance from the Rock Lighthouse to Jordan's Bank being some seven or eight miles!

MASSIE'S PUMPS.—A trial was made lately on board H. M. S. Thunderer, in the basin at Sheerness, on the comparative merits of Massie's new patent pump, and the old chain pump. Massie's pump is a double-action lift and forcing pump: the vacuum caused by a piston, 18 inches long, working in a chamber, and, in some degree, a force pump; the down stroke of the piston forcing the water out on its return.

In the first trial, which lasted 8m. 40s., Massie's pump discharged 11.052 tons of water, while the chain-pump threw up only 9.906 tons; being nearly ⅛ in favour of Massie, and the seamen were not much exhausted. The second trial was to throw up four tons of water in the least time: this was done by the chain-pump in 3.55; by Massie's in 4.10; being 15 sec. in favour of the chain. But the men at the chain-pump could not have continued working at that rate; and Massie's also would probably have done more, had it been worked more slowly.

The advantages in Massie's pump, on a slight inspection, appear to be, that it does equal work with less fatigue to the men; that it cannot be easily choked, as it would discharge a block of wood 9 or 10 inches in diameter; that the chamber may be placed under water, and thus secured from shot, as in the chain-pump; that it may be worked either on the main, lower, or orlop deck of a line-of-battle-ship; that it exposes less surface to shot than the chain-pump, and is as easily repaired. It is probable the inventor may make slight improvements in his pumps; while there is little doubt they will be found highly useful in the navy, yet will not supersede the chain-pump, which the experience of many years has proved to be highly serviceable.

IMPROVEMENT OF THE HARBOUR OF ALEXANDRIA.—We understand that Mehemet Ali has given directions for the improvement of this harbour by the removal of the rocks which impede the entrance. The sum of £100,000 is to be expended in the purchase of three steam-vessels, and a machine to be worked by steam, all of which are to be forwarded for the above purpose from England immediately.

STEAM-BOAT PADDLES.—A very ingenious substitute for the present paddles of steam-boats has been made by Mr. T. Grant, the inventor of the machinery in the victualling department at Weovil. Our readers are aware of the disadvantages which necessarily belong to the paddle now in use, and also that several attempts have been made, but hitherto in vain, to obviate them. The principal objection to them, is in the motion of the paddle after it passes the vertical position, the force of the engine being then absolutely employed in lifting the water, whereby it is not only lost in propelling the vessel, but also operates much to her disadvantage. In fact, it is quite evident that the tendency of the paddle in its revolution, before it reaches the vertical position, is to raise the vessel, and, after it has passed it, to depress her in the water; although the effect of the former, from the rapidity of the vessel's motion, may be considered trifling in comparison with the latter. Mr. Grant is of opinion that his invention will do away with this difficulty, inasmuch as his paddles always preserve the vertical position, which only is the proper one for the paddle to act with its full effect. His invention is exceedingly simple and ingenious. It may be described as follows:—About five feet above the water-line of the vessel, two three-throw crank shafts project horizontally, which are driven by a centre, and two spur wheels. The paddles are suspended from the foremost crank shaft, one from each crank, and are kept in the vertical position during the revolution by being attached to rods, which connect them with the after-crank shaft, and they thus work simultaneously, each paddle describing a semicircle. There are several advantages attending these paddles, among which are the facility of unshipping them when not required, and the disposal of the huge and unsightly paddle-box belonging to steam-vessels, and so detrimental to men-of-war. The velocity may be varied in the new paddle as in the old paddle, by the number of revolutions in the minute; and in a vessel of 300 tons, Mr. Grant calculates that he keeps a surface of thirty square feet in motion. We heartily wish the ingenious inventor every success on the grand scale that his model appears to promise him.

METEOROLOGY.—Professor Kämtz of Halle, the author of the excellent *Lehrbuch der Meteorologie*, the first volume only of which, we believe, has yet made its appearance on the continent, has recently returned from his meteorological tour in Switzerland, where he completed a valuable series of observations, made at 8,000 feet above the level of the sea.

NAUTICAL SURVEYS.—H.M. ship Thunderer (originally a bomb-vessel) having been fitted for the purpose, has been commissioned by Commander R. Owen at Chatham, to continue the survey of the West Indies. The Jackdaw, Lieut. Barnett, which will act in conjunction with the Thunderer on this service, has already sailed from Chatham, and is now on her way to recommence the survey.

ROYAL NAVAL SCHOOL, CAMBERWELL.—It is with sincere pleasure that we are enabled to inform our readers that the Royal Naval School was opened at Camberwell on the 15th of April, under auspices which justify the belief that it is calculated to become an establishment of vast national importance towards the future respectability and efficiency of the British Navy.

Every vacancy is now filled, the school being only capable of containing the limited number of 150 boys, among whom are two orphans, who will be gratuitously educated, and four on the reduced charge of one month's half-pay per annum. It perhaps may be gratifying to those interested, and to the service in general, to know a few particulars respecting the internal economy and arrangements of this establishment, and we are happy to be able to furnish them with the following details. Every boy has a separate bed: the bedsteads being of iron, the beds and pillows of the very best horse-hair, and supplied with linen sheets, best Whitney blankets, and white counterpanes. The following is a list of the officers of the establishment:—

The Rev. H. Pemble, Head Master, at............	£400	per annum.
Mr. Robert Middlemist, Mathematical Master......	150	....
Mr. W. Harrison, Grammatical Master............	150	....
Lieut. C. Brand, R.N. Sec. & Accountant (non-resident)	150	....
Lieut. Charles Turrell, French Master do.	110	....
Mrs. M. Hunt, Housekeeper....................	60	....
Serjeant Secker, R.M., Steward..................	50	....
One Head Warden..........................	30	....
One Under do.	20	....
Six Female Servants	—	....
One Labourer	—	....

There will be no holidays at the ensuing midsummer, in consequence of the shortness of the time between that period and the opening of the school. The annual general meeting will be held at the Thatched-House on Thursday the 23d day of May next, on which day the chair will be taken at 12 o'clock precisely.

At the same time that we announce these particulars, we are concerned to state that Lieut. Brand has resigned his situation of Secretary to this establishment, having succeeded to an appointment in the Kennet and Avon Canal Company, as their Accountant. The council have passed a resolution expressive of their regret at his resignation, as well as of their high sense and unqualified approbation of his exertions.

Lieut. Brand will be succeeded by Mr. J. M. Hope, Purser R.N., whose qualifications for the office, we are informed, are in every way satisfactory.

Scale of Victualling at the Royal Naval School.

	Breakfasts Daily.
	½ oz. of Cocoa. ½ gill Milk. ¾ oz. Sugar. ¼ lb. Bread. ¾ oz. Butter.
	Dinners Daily.
Sunday	¾ lb. of Round of Beef Roasted. ½ .... Plum Pudding Boiled. ½ .... Potatoes. ½ pint Beer.
Monday	¾ lb. of Leg of Mutton boiled. ½ .... Potatoes. ¼ .... Bread. ½ pint Beer.
Tuesday	½ lb. of Beefsteak in Pies. ¼ .... Flour. ½ .... Potatoes. ½ pint Beer.
Wednesday	½ lb. of Leg of Mutton Roasted. ½ .... Suet Pudding Boiled. ½ .... Potatoes. ½ pint Beer.
Thursday	½ lb. of Beefsteak in Puddings. ¼ .... Flour. ½ .... Potatoes. ½ pint Beer.
Friday	½ lb. of Round of Beef Corned. ½ .... Potatoes. ¼ .... Bread. ½ pint Beer.
Saturday	½ lb. of Mutton } Irish ½ .... Potatoes, Onions } Stew ¼ .... Bread. ½ pint Beer.
	Suppers Daily.
	¼ lb. of Bread. 2 oz. Cheese, and ½ pint Beer.

Charles Brand, Secretary.

NAUTICAL MISCELLANY.

NAVAL INTELLIGENCE.

The Royal Navy in Commission.

⁂ S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

Actæon, 26—Hon. F. W. Grey, 2d Feb. at Naples.

Ætna, S. V. 6—Com. E. Belcher, at Oporto.

African, St. V. — Lieutenant J. Harvey, 14th April arrived at Plymouth.

Alban, St. V. — Lieut. A. Kennedy, 23d March arrived at Plymouth.

Alfred, 50—Capt. R. Maunsell, 27th Feb. arrived at Malta.

Algerine, 10—Com. Hon. J. F. F. De Roos, 10th Feb. arrived at St. Helena, 13th sailed for Rio.

Alligator, 28—Capt. G. R. Lambert, 24th Sept. Singapore. 25th sailed for Manilla.

Arachne, 18—Com. W. G. Agar, 15th Jan. at Demerara.

Ariadne, 28—Capt. C. Phillips, 8th Feb. at Port Royal, Jamaica.

Asia, 84—Capt. P. Richards. Flag Ship, (*i*) Tagus.

Astrea, 8—Capt. W. King, Falmouth.

Athol, *Troop Ship*—Mr. A. Karley, 29th Jan. arrived at Barbadoes.

Badger, 10—Com. G. F. Stowe, Simon's Bay, 20th Dec.

Barham, 50—Capt. H. Pigot, 2d Feb. at Napoli di Romania. Flag Ship (*e*).

Beacon, (late Meteor)—Com. R. Copeland, Archipelago.

Beagle, 10—Com. R. Fitz-Roy, 2d Nov. at B. Ayres. 24th Nov. at Monte Video.

Belvidera, 42—Capt. Hon. R. S. Dundas, Feb. at Tripoli.

Blanche, 46—Capt. A. Farquhar, K. H. C. B. Feb. at Jamaica.

Brisk, 3—Lieut. J. Thompson, Gold coast.

Britannia, 120—Capt. P. Rainier, Tagus.

Britomart, 10—Lieutenant H. Quin, Plymouth.

Buffalo, *Store Ship*—Mr. F. W. R. Sadler, *Master*, 12th April left the Nore for Woolwich.

Caledonia, 120 — Captain J. Hillyar, Tagus.

Carron, St. V.—Lieut. Com. J. Duffill, Plymouth.

Castor, 36—Capt. Rt. Hon. Lord John Hay, 17th April at the Nore from Chatham.

Ceylon, 2.—Lieut. H. Schomberg, Malta.

Challenger, 28—Capt. C. H. Freemantle, 15th Oct. arr. at Sydney. Expected home.

Champion, 18—Com. Hon. A. Duncombe, Feb. Tripoli.

Charybdis, 3 — Lieut. Com. R. B. Crawford, Gambia.

Clio, 18—Com. J. J. Onslow, 17th Nov. arr. at Rio from Pacific. 5th Dec. sailed for Falkland Islands.

Cockatrice, 6—Lieut. Com. W. L. Rees, Rio.

Cockburn, 1—Lt. Com. C. Holbrook, Kingston, Lake Ontario.

Columbia, St. V. 2—Lt. Com. R. Ede, Woolwich.

Columbine, 18—Com. O. Love, 28th Jan. arr. at Barbadoes.

Comet, St. V.—Mr. T. Allen, Woolwich.

Comus, 18 (late Comet)—Com. W. Hamilton, 26th March, arrived at Madeira. 27th, sailed for West Indies.

Confiance, St. V. 2—Lieut. Com. H. F. Belson, 1st April, arrived at Plymouth.

Conway, 28—Captain Eden, 20th April, sailed for Downs.

Cordelia, 10—Com. C. Hotham, Feb. at Malta.

Curaçoa, 26—Capt. D. Dunn, 1st Sept. arr. at Manilla from Singapore.

Curlew, 10—Com. H. D. Trotter, 9th Jan. Simon's Bay. 25th Jan. St. Helena.

Dee, St. V. 4—Com. R. Oliver, Woolwich.

Dispatch, 18—Com. G. Daniell, 5th Jan. arrived at Havana.

Donegal, 74 — Capt. J. Dick. Flag Ship. (*d*) 20th March, Sheerness. 12th April, sailed for Downs.

Dromedary—R. Skinner, Bermuda.

Druid, 46—Capt. S. Roberts, C.B. 31st March, off Oporto.

Dublin, 50—Capt. Rt. Hon. Lord J. Townsend, 20th Nov. left Valparaiso for Callao, 30th arrived.

Echo, St.V. 2—Lieut. Com. Otway, Oporto.

Excellent, 58 — Capt. T. Hastings, Portsmouth.

Fairy, S.V. 10—Com. W. Hewett, Sheerness.

Favorite, 18—Gold coast.

Firebrand—Lieut. W. G. Buchanan, Woolwich.

Firefly, 2—Lieut. J. M'Donnel, Bahamas.

Firefly, St. V.—Lieut. T. Baldock, 6th April, arr. at Falmouth.

Flamer, St. V. 6—Lieut. R. Bastard, 14th March, arr. at Gibraltar.

Fly, 10—Com. P. M'Quhae, Feb. Carthagena.

Gannet, 18—Com. M. H. Sweney, Feb. Jamaica.

Griffon, 3—Lieut. Parlby, Africa.

Harrier, 18—Com. H. L. S. Vassal, 25th Oct. arr. at Madras from Calcutta.

Hermes, St. V.—Lieut. J. Wright, 5th April, sailed for Mediterranean.

Hornet, 6—Lieut. F. R. Coghlan. 20th Oct. sailed for South America.

Hyacinth, 18—Com. T. P. Blackwood, 13th sailed for Downs.

Imogene, 18—Capt. P. Blackwood, August, at Malacca.

Investigator, 16, S. V.—Mr. G. Thomas, Shetland Islands.

Isis, 50—Capt. J. Polkinghorne, Flag Ship (*k*) 23d Nov. Mauritius from Cape.

Jackdaw, S. V.—Lieut. E. Barnett, 16th April, left the Nore for Plymouth.

Jupiter, *Troop Ship*—Mr. R. Easto, 7th Jan. sailed for Mauritius. 16th, arrived at Cape.

Kangaroo, 3—Lieut. T. Hickey, Bahamas. 8th Dec. at Havana.

Larne, 18, (*late Lightning*)—Com. W. S. Smith, 13th April, arrived at Portsmouth.

Leveret, 10—Lieut. W. F. Lapidge, 18th Jan. arr. at Lisbon from Falmouth.

Lightning, St. V.—J. Allen, Woolwich.

Madagascar, 46—Capt. E. Lyons, 21st Feb. arr. at Malta.

Magicienne, 24—Capt. J. H. Plumridge, 25th Oct. at Madras.

Magnificent, 4—Lieut. J. Paget, Port Royal.

Magpie, *Cutter*—Lieut. J. Moffat, Sheerness.

Malabar, 74—Capt. Hon. J. Percy, 25th March, arrived at Portsmouth. 7th April, sailed for Mediterranean.

Mastiff, 6, S. V.—Lieut. T. Graves, Archipelago.

Melville, 74—Capt. H. Hart, 25th Nov. Ceylon. 10th Jan. at Bombay. Flag-ship. (*h*)

Messenger, St. Transp.—26th Feb. sailed for Plymouth.

Meteor, St. V.—Lieut. Symons, 25th March, arr. Malta.

Minx, 3—Lt. J. Russell, 10th Jan. at Jamaica.

Monkey, —Lieut. , Feb. at Jamaica.

Nautilus, 10—Com. Rt. Hon. Lord G. Paulett, Oporto.

Nimble, 5—Lieut. J. M. Potbury, Bermuda.

Nimrod, 20—Com. Lord E. Russell, Oporto.

North Star, 28—Capt. Lord W. Paget, 1st Jan. at Barbadoes.

Ocean, 80—Capt. S. Chambers. Flag-ship, (*a*) Sheerness.

Onyx, 10—Lieut. A. B. Howe, Plymouth.

Orestes, 18—Com. W. N. Glascock, Oporto.

Pallas, 42—Capt. W. Walpole, 11th Feb. at Trinidad.

Pearl, 20—Com. R. Gordon, Feb. Jamaica.

Pelican, 18—Com. J. Gape, 27th Feb. arr. Malta.

Pelorus, 18—Com. R. Meredith, 9th Jan. Simon's Bay.

Philomel, 10—Com. W. Smith, 25th Nov. Gibraltar.

Pickle, 5—Lieut. C. Bagot, Bahamas.

Pike, 12—Lt. A. Brooking, 1st April, sailed for Lisbon.

Pincher, 5—Lt. J. Hookey, Feb. at Jamaica.

Pluto, St. V.—Lieut. ————, Bight of Benin.

Pylades, 18—Com. E. Blankley, Rio Janeiro.

Racehorse, 18—Com. F. V. Cotton, 2d Oct. sailed for Jamaica.

Rainbow, 28—Capt. Sir J. Franklin, Knt. Feb. Corfu.

Raleigh, 18—Com. A. M. Hawkins, Feb. Smyrna.

Rapid, 10—Com. C. H. Swinburne, 5th Feb. at Napoli di Romania.

Rattlesnake, 28—Capt. C. Graham, 23d Dec. sailed for Lima.

Raven, S. V. 4—Lieut. W. Arlett, Lisbon.

Revenge, 78—Capt. D. H. Mackay, 2d March, sailed for West Indies with 67th Regiment. Touched at Madeira 6th March.

Rhadamanthus, St. V.—Com. G. Evans, Plymouth.

Romney, *Troop Ship*—Mr. R. Brown, Cork.

Rover, 18—Com. Sir G. Young, Bart., 4th March, arr. at Gibraltar with Col. Campbell. 5th, sailed for Alexandria. 13th March, at Malta.

Royalist, 10—Lieut. R. N. Williams, 7th February, arrived at Falmouth from Oporto.

St. Vincent, 120—Capt. H. F. Senhouse. Vigo, 19th March.

Salamander, St. V.—Com. W. F. Austin, 8th April, Sheerness. 12th April, sailed for Downs.

Samarang 28—Capt. C. H. Paget, 10th Oct. M. Video.

San Josef, 110—Capt. R. Curry, Plymouth, Flag-ship. (*c*)

Sapphire, 28—Capt. Hon. W. Trefusis, 25th Jan. sailed from Jamaica. 6th Feb. returned.

Satellite, 18—Com. R. Smart, 31st March, arr. Portsmouth. 18th April, sailed for Plymouth.

Savage, 10—Lieut. R. Loney, 9th March arrived at Lisbon.

Scout, 18—Com. W. Hargood, Downs.

Scylla, 18—Com. Hon. G. Grey, 27th Feb. arr. at Malta.

Seaflower, 4—Lieut., J. Morgan, 25th Feb. Sailed for Lisbon.

Serpent, 16—Com. Symonds, 11th April, sailed for Oporto.

Skipjack, 5—Lieut. W. Shortland, Bahamas.

Snake, 16—Com. W. Robertson, 14th April, sailed for Downs.

Sparrow, *Cutter*—Lieut. C. W. Riley, Portsmouth Station, cruizing.

Sparrowhawk, 18—Com. Currie, Feb. at Vera Cruz.

Spartiate, 74—Capt. R. Tait, 9th March, arrived at Madeira. 11th, sailed for Rio.

Speedwell, 5—Lieut. Crooke, 4th Nov. at Barbadoes.

Speedy, *Cutter*—Lieut. J. P. Roepel, Plymouth, cruizer.

Stag, 46—Captain N. Lockyer, 3d April, arr. Portsmouth.

Swan, 10—Lieut. J. E. Lane, North Sea.

Sylvia, 1—Lieut. T. Spark, Portsmouth Station cruizer.

Talavera, 74—Capt. T. Brown, North Sea.

Talbot, 28—Capt. R. Dickinson, C.B. 29th Nov. Mauritius.

Thunder, S. V.—Commander R. Owen, Chatham.

Trinculo, 18—Com. R. Booth, 23d Dec. left Bahia for Mauritius.

Tweed, 20—Com. A. Bertram, Feb. St. Jago de Cuba.

Tyne, 28—Capt. C. Hope, 18th Dec. left Rio for Pacific.

Undaunted, 46—Capt. E. Harvey. 9th Jan. at Simon's Bay. 30th Jan. at Ascension from St. Helena.

Vernon, 50—Capt. Sir G. A. Westphal, Knt. 1st March, arrived at Madeira. Sailed 2d.

Victor, 18—Com. R. Russell, 7th Feb. at Barbadoes.

Victory, 104—Capt. C. R. Williams, Flag-ship (*b*) Portsmouth.

Viper, 6—Lieut, H. James, Plymouth.

Volage, 28—Capt. G. B. Martin, C. B. Portsmouth.

Winchester, 52—Capt. Hon. W. Wellesley. 2d Feb. sailed from Bermuda for Jamaica. Arrived, 11th Feb. (*f*)

Wolf, 18—Com. W. Hamley, 25th Oct. at Madras.

Zebra, 18—Com. Rt. Hon. Lord F. C. P. Beauclerc, 19th April, arrived at Plymouth.

Commissioned.

Jackdaw, Surveying Vessel, Chatham.

Britomart, 10—at Plymouth.

Volage, 20th April, Portsmouth.

Paid off into Ordinary.

Forrester, Plymouth.

Warspite, Portsmouth, 25th March.

VARIETIES.

Launch of H.M.S. Vestal.—On Saturday, April 6th, was launched at Sheerness, the Vestal, a small frigate of 26 guns—built from a draught of Capt. Symonds, surveyor of H.M. Navy.

The day was bright and beautiful, and at an early hour the dock-yard gates were thrown open to the public.

At a quarter past one, the Vestal, named by Miss Marianne Beresford, youngest daughter of Vice-Admiral Sir John P. Beresford, Commander-in-Chief,—glided, or rather rushed into the water in beautiful style, greeted by the cheers of from 3 to 4000 spectators, and by the truly national air 'Rule Britannia,' played by the bands of the dock-yard and of H.M.S. Ocean. She was immediately taken into the basin, and on the following days was coppered and masted, and now lies in the basin ready for commissioning.

The Vestal is a remarkably fine ship of war, the first of her class built by the present surveyor of the navy—a link between the Rover Corvette, of 18, and the Vernon of 50 guns—good height on main-deck, and ample space between the ports for fighting her guns.

She is fitted with Massie's new patent pumps, instead of chain-pumps, with an improved capstan, and well finished throughout.

DIMENSIONS.

Tonnage	913	tons.
Light displacement, or weight of Hull.	530	
Load ditto. . . (probable)	1030	
Length of Lower Deck . .	130	feet.
————Keel . . .	105	
Breadth of Beam . . .	40	6 inch.
Depth of Hold . . .	11	6
Light draft of water forward .	9ft.	11½
aft .	15ft.	4½
From centre to centre of ports on Middle Deck . . .	11ft.	8

Launch of the Royal William at Pembroke Dock Yard.—This magnificent ship was launched on Tuesday last, in the presence of thousands of spectators. She glided past the vessels after taking the water rapidly, and would have reached the other shore, but her speed was soon checked by letting go her ponderous anchor, and she was speedily brought up, hauled alongside His Majesty's ship Hannibal, and secured in safety until the Bellisle, of 74 guns, now repairing in dock, shall be hauled out to make room for this splendid three-decker, to copper, mast, &c. The name was given by Lady Owen, the Lady of Sir J. Owen, M.P. and Lord Lieutenant of the county of Pembroke, who also cut the rope by which the weights were suspended that fell on the dog shores, and set her off. This part of the business being now conducted on a very simple and new principle, the following explanation may be deemed interesting. On each side the bows, the dog shores are affixed to the keel of the vessel, from which trunks, of wood, enclosing two large pieces of pig iron, are suspended by pullies, held by a cord fastened to the stem of the ship. Capt. Buller, R.N. superintendent of the yard, held a chisel on the cord, which Lady Owen struck with a small mallet; the weights fell on the dogs shores, and the ship went off in noble style.

DIMENSIONS, &c.	*Feet.*	*In.*
Length aloft over all . . .	244	9½
Ditto of lower gun deck . .	203	0
Depth of hold from ditto . .	23	0
Breadth to outside the whales	56	0
Height from the top sides to the under side of the false keel	64	5½
Weight	4598 *tons*	
Admeasures . .	2698 *tons* 5-94*ths*	
Guns	120	
Cost for building . . .	£94,971 0 0	

Draught of water when launched, 18 feet; expected to draw about 26, when all her ballast, guns, stores, and provisions for six months, are shipped.

The punishment for smuggling—that of compelling offenders to serve five years in the Navy is abolished; fine and imprisonment in future will be the only penalty.—*Devon Her.*

It is now finally determined that the present tower over the rigging loft, in the Dock-yard, is to be the future semaphore, instead of the erection at Lump's Fort, now used for that purpose. The only alteration which will be requisite consists of a new shaft, with wings to work, and which have been ordered to be constructed and fixed forthwith.—*Ports. Her.*

New Boat for Canals.—Saturday a trial was made upon the Paddington Canal of the new canal boat; the object of which was to show, that a boat built in a different form, and constructed of other materials than those of the ordinary canal boat, might, by using superior horses, be drawn along the water at the rate of ten miles or more in an hour, instead of at two, the pace of the boats now in use. The day was remarkably fine. The portion of the canal more particularly appropriated to the experiment was from the third to the seventh mile from Paddington. The boat was constructed of sheet iron, riveted hot. It was 70 feet long, by five and a half wide, painted green and white, and provided with an awning of white twilled cotton cloth, rendered semi-transparent with oil. The rudder is a single sheet of iron about a yard long, and moved by a tiller made of about two yards of stout rod iron. Two steady hunting horses, each mounted by a lad, and the two harnessed to a towing-rope of about 150 feet in length, constituted the moving power. The number of persons on board the boat was 48, including the crew, the gentlemen making the experiment, some of the principal members of the Grand Junction Company, and the visitors, amongst whom were Mr. Telford, Mr. Babbage, and Captain Basil Hall. Certain distances were measured on the canal bank, and marks set up at the ends of them. At each of these places also, a man was stationed with a gauged rod in his hand, with which, as the boat passed, he might mark the height of the wave caused by the disturbance of the water. The speed from one station to another, taken by second watches, showed, for some time, a progress at the rate of thirteen miles an hour. The horses, however, began to tire, and the speed fell to eleven, and ultimately, in returning for the third time, to 10¼. The motion is the easiest imaginable. The boat glides along the water so smoothly and noiselessly, that its progress is all but imperceptible to those on board whose attention is not directed to external objects. The banks of the canal will have to be edged for nine or ten inches above the ordinary level of the water with hard materials, and the towing path to be slightly sloped outwards.—*Hants Tel.*—[See an account of these boats in No. 7 of Naut. Mag.]

We noticed some weeks ago that the Eden was to be broken up. Similar orders have since been issued, respecting the Bucephalus and Hyperion.—*Ports. Herald.*

A novel experiment has just been made, by covering the bottom of the Success with lead, and which we have before alluded to in anticipation. The lead, has, however, been fastened with iron nails. We should think this would not answer, inasmuch as the heads of the nails will become corroded, and, in consequence, the lead will probably fall off the bottom. Time will, however, show. It is in contemplation to moor the Success at Spithead, for the purpose of gun exercise, under the superintendency, we hear, of Captain Hastings, of H.M.S. Excellent.—*Portsmouth Herald.* 14 *April.*

Lieut. Drummond, of the Royal Engineers, who, previous to the introduction of the Reform Bill, was employed by Government to calculate the relative value of places, according to their population, &c. is appointed Private Secretary to the Chancellor of the Exchequer.—*Hants Tel.* 6 *April.*

The naval duties of Commander-in-Chief, hitherto performed at the Admiral's office in the High-street, have this week been transferred to the office in the Dock-yard, lately occupied by the Rear-Admiral Superintendent; a change which we conceive will be found, as far as the public service is concerned, neither convenient nor economical.—*Ports. Her.* 6 *April.*

A new night Police is to be organized in his Majesty' Dock-yards, which will be composed of persons who are not engaged in any other capacity in those establishments. The duty has hitherto been discharged by the labourers, &c. in rotation. It is also determined, that a portion of the New Police shall be employed in rowing round the yards at night, for the purpose of more effectually protecting the establishments from embezzlement.—*Hants Tel.*

The officers in command of the boats belonging to H. M. S. Spartiate and Rover, who so laudably exerted themselves in saving the lives of the crew of the brig Erin, stranded on the breakwater, on the 23rd February, have been awarded a silver medal each, from the Royal National Institution, for the preservation of life from shipwreck. The society has also determined on presenting each boat's crew with £5 for their praise-worthy and successful exertions. —*Ports. Her.* 6 *April.*

All students discharged from the Naval College after July 1833, are, by order in council, to serve five years on board sea-going ships, before they can be examined for Lieutenants, without reference to the time allowed them for their studies at the College, wherein they are required to remain two years.—*Hampshire Telegraph.*

The Admiralty, by a recent regulation, are determined to make the Island of Ascension a valuable source of revenue to the mother country. The Governor there has been ordered to charge all applicants thirty shillings each for turtle, and remit home an account of the amount.—*Hants. Tel.*

By some Trinity House Returns, which have been printed for the use of the House of Commons, it appears that the receipts by that Corporation for all the light-houses in its charge, in the year 1831, was £73,075, the expenses £41,148, and consequently the surplus was £31,926; receipts for buoyage and beaconage £3801, rents £975, dividends of funded property £4956; discount for prompt payment of tradesmen's bills £497, with some other items, making a clear surplus receipt of £42,656, which was expended in the following manner:—

Deficiency on the account of Pensions, - -	£23,565	5	11½
Charges of the House and Offices on Tower-Hill, viz., taxes, repairs, furniture, insurance, wages to housekeeper, servants, gatekeeper, and watchman, - - -	2,042	10	3
Salaries to twenty Elder Brethren, pursuant to Act 3 Geo. 4. c. 111., -	6,700	0	0
House Expenses for Court and Audit Dinners, Board of Housekeeper and Servants, together with the total expense of the Procession and Dinner, on the Anniversary of Trinity Monday, - -	1,805	1	11
Salaries and Allowances to the Secretary and Clerks employed in the transaction of the general business of the Corporation, and Wages and Allowances to Messengers and Watermen, - -	4,678	10	9
Salaries to Clerk of the Works, Ruler of Pilots at Gravesend, Clerk of Ships' Entries (Customs), for daily Lists of Vessels reported with and without Pilots, Mathematical Examiner, Parliamentary Remembrancer, and Surgeon,	526	0	0
Pension to the Widows of a Mathematical Examiner, Maritime Surveyor, and Ruler of Pilots at Gravesend, and Allowance to the late Secretary, - -	585	0	0
Charges for a Committee to Sligo, to confer with the Ballast Board of Ireland, relative to the site of a Lighthouse at that Port,	68	6	0
Incidental charges not applicable to any particular account; postages of letters, stationery, advertisements, printing, books, maps, charts, stamps, newspapers, coach-hire, carriage of parcels, &c. -	856	7	10
Sundry law expenses in relation to the Pilotage Act, Exemptions of Elder Brethren from serving on Juries; sundry Retainers to Counsel, &c. - -	80	16	0
	£40,907	18	8½
Surplus, -	1,748	4	7½
	£42,656	3	4

By another Trinity House return it appears, that the Light charges for several lights have been diminished by one half since 1823; that the Gull

Stream Light, which used to be maintained by the Admiralty, has since 1826 been paid for by the Trinity House, who gave also in June last, the sum of £8,399 16s. 0d. to Greenwich Hospital for the Forelands Lights; and the following sums to private individuals for private lights:—for Flatholm, £16,057; Fern, £36,435; Burnham, £13,681. In 1823, the Corporation wished to purchase the Smalls Light, but the proprietors demanded twenty-two years' purchase or £148,430, which the Trinity Board declined giving. The owners of the Mumbles and the Longships Lights have declined to sell their rights; the proprietor of the Hunstanton Light is willing to sell his right for £6,380.—*Hants' Telegraph.*

Extract of a letter, dated Napoli, in Greece, Feb. 5, 1833:—"The Alfred, bearing the flag of the Commander-in-Chief, arrived here from Malta, 17th January. On the 30th, the Madagascar arrived with king Otho, accompanied by a Russian frigate, a French corvette, and two Greek men-of-war; also about forty sail of transports, having three thousand Bavarian troops on board. As the Madagascar approached the anchorage, the Alfred, bearing the Commander-in-Chief's flag, hoisted the Greek ensign at the main, and fired a royal salute, which was followed by the other Admirals' ships and vessels of their respective squadrons. On the following day, the king held a levee, at which the officers of the squadron were presented. The forts on shore saluted at the same time; every hill and place commanding a view of the ship in which the king was, was crowded with Greeks, who, with loud cheers, welcomed their new king. The town of Napoli, and also Argos, was illuminated in the evening. The troops were all disembarked on the 3d inst. and it is expected the king will land to-morrow or next day, which no doubt will be a grand sight, from the great preparations that are making for it.—*Ports. Her.*

Extract of a letter from an officer of H.M.S. Alfred, dated Nauplia, 2d Feb. 1833:—"We arrived here on the 17th ult. from Malta, having the flag of Sir Henry Hotham. King Otho was then daily expected; preparations were actively going on on shore for his reception. The day before our arrival, a small affray had occurred at Argos, between the French troops and a party of Greeks, about the possession of the barracks, when a number on both sides were killed and wounded. With this exception, the country has been, and now is, perfectly tranquil, the nation anxiously looking for their long-expected sovereign. This expectation has at last been realized, the Madagascar having arrived three days ago, with his majesty and regency on board, accompanied by a French, Russian, and Greek man-of-war, carrying the Greek Deputies and Bavarian Generals, and about forty transports, conveying between 3000 and 4000 troops. The sight was very imposing, the Madagascar leading the way in, the other vessels following to their anchorages, amid the royal salutes of the allied squadrons and forts on shore. Large assemblages of Greeks stood on the beach, dressed in their various handsome costumes, shouting and welcoming their first sovereign to their land of independence. The palace and accommodations for the suite not being entirely finished, the royal landing has been delayed for some days. The troops, a superior body of men, have commenced disembarking to-day. His majesty is a fine strapping youth of nineteen, tall, but rather thin, amiable and affable in his manners; but, although he familiarly waltzes and quadrilles with the ladies of the suite, and midshipmen on the quarter-deck, yet he can do his part of royalty, too, when he pleases. A levee was held on board the other day, when all the Captains and commissioned officers of the squadron were presented. A splendid triumphal arch is preparing at the main gate of Napoli, through which the king is to enter; the streets are getting paved, and the inhabitants are decorating their houses with all sorts of laurels. It is really grand to ascend the Palimede, and look down on the numerous fleet in the bay; it reminds one of the days of Troy, when the noble heroes of Greece, assembled under the banners of the 'King of Men,' were embarking for Phrygia's shores, to demand restitution of Menelaus's fair and beautiful queen.

The Success has been undocked, and hauled alongside the jetty, to fit as a vessel for the gunnery exercise at Spithead.—*Portsmouth Herald.*

The Eden is gone into a dock for the purpose of being carefully taken to pieces, for examination, as to the exact state of her frame and planks, as stated in a former *Herald.* The Warspite and Volage have been undocked, and the Pantaloon docked.—*Ports. Her.*

PROMOTIONS AND APPOINTMENTS.

Promotions.

Commanders—W. C. Brown; T. Baker; W. Molyneux.

Lieutenants—J. V. Anson; C. Baker; R. Gore; T. Smith; J. Tyssen.

Purser—J. Lyall.

Appointments.

Alfred, 50—*Purser* G. Waller; *Clerk* C. Calls.

Badger, 10—*Lieut.* J. Brooman.

Britomart, 10—*Lieut.* W. H. Quin; *Assist. Surg.* J. Donovan, M.D.; *Mid.* B. A. Wake.

Buffalo—*Mate* J. Bowler.

Castor, 36—*Assist. Mast.* J. Mitchell.

Clio, 18—*Assist. Surg.* J. Mould.

Coast Guard—*Com.* S. Smith; *Lieuts.* W. Fothergill; E. H. Harvey; J Jeans, South-sea Castle; J. Langworthy; J. R. R. Lilburn; J. D. Ramsay; J. Stewart; J. H. Weller.

Columbia, St. V.—*Lieut.* R. Ede; *Assist. Surg.* A. Yeoman.

Comet, St.V.—*Com.* W. C. Brown.

Confiance, St. V.—*Lieut.* J. W. Waugh; *Clerk* J. S. Pope.

Curlew, 10—*Purser* T. Johnstone.

Dee, 4, St. V.—*Assist. Surg.* S. Clarke.

Donegal, 78—*Marines, Capt.* F. Layton; *2d Lieuts.* C. F. Hoskins; B. Varlo.

Emulous, *Pack.*—*Assist. Surg.* G. Moore.

Excellent, 58—*Carp.* D. Inglis.

Fly, 18—*Purser* I. Lyall.

Hound, *Rev. Cr.*—*Lieut.* J. Helby.

Hyacinth, 18—*Mast.* J. M'Donald; *Surg.* C. Pattison; *Purser* C. Colewell; *Mate* G. Backhouse; *Assist. Surg.* A Muirhead; *Clerk* J. Wilkins.

Lord Lynedoch, *Con. ship*—*Surg.* D. Watson.

Madagascar, 46—*Lieut.* J. W. Morgan; *Purser* T. Tilby.

Magicienne, 24—*2d Lieut. Mar.* T. C. C. Moore.

Malabar, 74—*Mate* J. B. Massie.

Melville, 74—*Lieut.* R. Gore; *2d Mast.* W. H. Dix.

Neptune, *Ord.*—*Boatsw.* J. Manning.

Ordinary, Portsm.—*Rev.* T. Ferris.

Raleigh, 18—*Purs.* J. Brenton; *Clerk* C. Wakeham.

Rattlesnake, 28—*Clerk* W. Bone.

Rhadamanthus, St. V.—*Assist. Surg.* J. Peters.

Royal George, *Ord.*—*Boats.* R. Eddy.

Salamander, St. V.—*Lieut.* J. H. Weller; *Assist. Surg.* A. Stuart.

Serpent, 16—*Lieut.* J. Hallowes; *Mast. Assist.* H. Webb.

Sheldrake, 4—*Mate* D. R. Mapleton.

Snake, 16—*Lieut.* F. Liardet; *Assist. Surg.* T. Fraser.

Sparrow, 10—*Clerk*, G. Doubt.

Swan, 10—*Clerk*, J. Devonshire.

St. Vincent, 120—*Lieut.* W. A. Morshead.

Talbot, 28—*Purser*, E. Thorne.

Thunder, *Surv. Vessel*—*Com.* R. Owen; *Lieuts.* B. Allen, Jas. Cannon; *Assist.-Surveyor*, Lieut. T. Smith; *Mast.* E. Dunsterville; *Purser*, J. C. Harris; *Assist.-Surg.* T. Smith.

Victory, 104—*Lieuts.* T. R. Eden, T. C. Rooke, A. Slade; *Chaplain*, Rev. G. Fisher; *Assist.-Surg.* W. Wright; *Sup. Assist.-Surgs.* C. Rankine, G. Moore, T. Brenan, F. Maunsell, M.D.

Volage, 28—*Capt.* G. B. Martin.

Wolfe, 18—*Mast.* T. Taylor.

Royal Marines.—*Second Lieutenants.*—*Plym. Divis.* R. B. Puddicombe; *Chath. Divis.* W. S. Budd, S. G. F. Mont; *Ports. Divis.* J. T. C. M'Carthy.

Mr. Rowe, Master Assistant's Attendant at Portsmouth dock-yard, is superannuated on £88 per annum. Mr. Hepburn, late Master's Attendant at Jamaica (which establishment has been reduced) to the Portsmouth yard, v. Rowe. Lieut. Scrymgour, who held the appointment of Resident Agent for transports at Gibraltar, is to be Agent for transports afloat, and has hoisted his pendant in the Orestes, prior to her leaving the river for Bermuda. Mr. Eddy, late Master Rigger of Sheerness dock-yard and Botswain of the Royal George, is appointed Warden of his Majesty's dock-yard at Deptford, vice Markett, deceased, on a salary of £120 per annum. Mr. G. Witt, late Clerk of this Dock-yard, to be one of the Clerks at the Admiralty. Lieut. M. Fitton (1804), to the out-pension of Greenwich Hospital.

The following Midshipmen passed their examination in navigation this week, at the Royal Naval College, viz.—Mr. Albert Heseltine and Mr. Robert W. Otway, both of the St. Vincent; Mr. F. A. Cudlip, of the Southampton; Mr. C. O. Hayes, late of the Dryad; Mr. E. Heathcote, of the Briton, and Mr. Z. Andrews, of the San Josef.

Royal Marines.—Second Lieut. Charles Fellowes Lamborne, of the Chatham Division of Royal Marines, has been allowed to resign his commission.

Mr. H. Croft, Midshipman of H.M.S. Malabar, was found duly qualified for a Lieutenant, on examination at the Royal Naval College, last week.

NEW MERCHANT VESSELS. FROM LLOYD'S REGISTER FOR 1833.

Reported to 20th April.				*Reported to 20th April.*			
VESSELS.	RIG.	WHERE BUILT	TONS.	VESSELS.	RIG.	WHERE BUILT	TONS.
Anne	Snow	Sunderland	189	Jane	Brig	Shields	115
Black-eyed Susan	Schooner	Maryport	138	Mary Gordon	Sloop	Whitehaven	55
Blakely	Ship	Hull	314	Prima Donna	Schooner	Ipswich	119
Candidate	Schooner	Saltcombe	152	Sir John Franklin	Snow	Newcastle	244
Denis Carthy	Schooner	Newport	102	Thomas Worthington	Brig	Liverpool	202
Ellen	Brig	Chepstow	136	Thomas and William	Brig	Newcastle	201
Englishman	Schooner	Bristol	139	Vine	Snow	Selby.	167
Evergreen	Brig	Whitehaven	190	William and Charles	Schooner	Yarmouth	95
Fairfield	Ship	Hull	433	Winwick	Brig	Lynn	226
Fortitude	Snow	Newcastle	255				
Glanmire	Schooner	Plymouth	108				
Grace	Brig	Sunderland	233				
Halse Town	Schooner	Newport	105				

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1833.

Continued from page 237.

VESSELS' NAMES.	MASTERS' NALES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
273 Active	Patterson	Guernsey	London	Whiteness R.	21 Mar.	Stores saved.
274 Alexis	Vaughan	Memel	Galway	Not heard of	since	6th Nov.
275 Avon	Cockerell		Oporto	Oporto	17 Feb.	Crew saved.
276 Arethusa	Strong	Lisbon	Gibraltar	Off Aveiro	18 Mar.	Two drowned.
277 Caldecot Castle	Sanders	Newcastle	London	Off Aldbro'	1 April	Crew saved.]
278 Crawford Davison	Sandford	Hambro'		Winterton	19 Mar.	Total.
279 Danube	Allen	Newcastle	Rostock	57 N. 6 E.	3 April	Aband. crew saved
280 Doctor	Underwood	Balize	Jamaica	Sun Island	24 Jan.	Crew saved.
281 Fanny	Heighton	Liverpool	S. Leone	C. de Verds	?	Total.
282 Hope	Loosemore			St. Michael's	19 Feb.	Crew& pt. cargo sd.
283 Hope	Gilmore			St Michl's Az	15 Feb.	Crew saved.
284 Huddersfield	Bolton	Hull	London	Rose Sand	1 April	Crew saved.
285 Industry	Gasson	Dover	Nieuport	Nr. Nieuport	22 Mar.	Crew saved.
286 Jas. Sibbald	Darby	Bengal	London	Coringa Bay		Crew&passengr.sd.
287 Java	Lester			Borneo	Nov.	Reported.
288 John	Blampied	Jersey	Shoreham	Newhaven	11 April	Crew& pt. cargo sd.
289 Liberty	Tulloch	Liverpool	Newcastle	Colonsay	3 April	Abandoned.
290 W. Little	Carter	Liverpool		California	Feb.	Scuttled.
291 Lively	Massingham	Sligo	London	Not heard of	since	9th Feb.
292 Lord Nelson	O'Neill	Youghal	Gloucester	Youghal	14 Mar.	
293 Lovely Ann	Unknown	London		Penzance	25 Mar.	Waterlogged.
294 LowtherHall				Stronsay I.	24 Mar.	
295 Magnet	Watkins	Liverpool	Alexandria	Coast Egypt	24 Feb.	During the night.
296 Margaret	?	Vessel	Capsized	Str. Malacca	1 Sept.	Part crew lost.
297 Mary	Williams	Waterford	London	Not heard of	since	28th March.
298 Mary MacDonald	Wallace	P. Cabello	Mobile	Pensacola	30 Jan.	
299 Murre	Rook	Youghal	Bristol	Severn	10 April	Sunk.
300 Native	Dungay	Cork	London	Not heard of	since	28th March.
301 Nymph	Evans	Galway	London	Not heard of	since	19th Feb.
302 Ospray	Drysdale	Newry	London	N. Rock, Belfast	1 April	Total crew saved.
303 Osprey	Robertson	Clyde	Westport	Near Tory I.	1 Mar.	3 crew drowned.
304 Peru	Hamman	Savana	Liverpool	35 N. 44 W.	Feb.	Aband. crew saved
305 President	M'Casky	Alicant	Londonder.	Arklow Bks.	11 April	Crew saved,run f.of
306 Providence	Young			North Sea	April	Crew saved.
307 Robert		Dundee	London	Off Dudgeon	9 April	Capsized in a squall
308 Shamrock	Woolongham	Liverpool	Oporto	I. Bayona	Feb.	
309 Turners	James	Liverpool	Virginia	Off C. Henry	1833 ?	Total.
310 Unknown	Supposed	a Convict	Ship	S. of Equator	10 Feb.	
311 Wesley	Johnson	Seaham	Stockton	Tees	15 Mar.	Crew& pt. cargo sd.
312 Bellona		StAndr. N B	Dublin	At Sea	Feb.	Aband. crew saved
313 Brunswick	Blewett	Calcutta	London	Hooghley	Oct.	Cargo part saved.

FURTHER PARTICULARS OF WRECKS.

Lord Nelson.—Driven from her anchors in the bay, and completely wrecked.

Industry.—Cargo wool.

Brunswick.—37 boxes of treasure saved.

Crawford, Davison.—Struck on the Haisbro' Sand: thrown on her beam-ends, and after the mainmast was cut away, was put on the beach at Winterton.

Wesley.—Of Sunderland, in attempting to enter the Tees got on the North Gare, and was totally wrecked.

William Little.—Taken possession of by crew, who threw the master overboard near the coast of California, and scuttled the vessel near Tannings Island. Four of the crew arrived at Woahoo, Sandwich Islands, 28th May last.

Lovely Ann.—Of London, was fallen in with seven leagues S.S.E. of St. Ives, waterlogged, and bows under.

Avon.—Of Bristol, in endeavouring to get into the Douro was fired at, on which the crew abandoned her. She was afterwards taken possession of, and burnt, by the forces of Don Miguel.

Hope.—Of Dublin, wrecked in consequence of missing stays on a lee shore, and having no anchors and cables on board.

Caldecot Castle.—Struck on the Sizewell bank. On getting off proved leaky, and obliged to run on shore on the main.

Fancy.—The statement of her loss dated at Liverpool, 4th April.

Osprey.—Wrecked on the North Rock in a gale from E.S.E. Sails and some materials saved.

Huddersfield.—Struck on the Rose Sand in an easterly gale off Saltfleet, and sunk. She broke up on the following day. Part of her cargo saved, consisting of wine and flour. Wheat and heavy goods lost.

Magnet.—Wrecked about 15 miles to westward of Alexandria. Only a few packages saved.

Lowther Hall.—The stern-frame of this vessel, the name in gilt letters under the figure of a sheep on it, was washed on shore on Stronsay, Hebrides.

Robert.—Capsized, and sunk. One boy only saved by the Triune of Sunderland.

Caledonia.—Sunk in entering Troon Harbour—supposed in consequence of striking an anchor. Her cargo will be severely damaged; vessel not much.

Arethusa, Strong.—Wrecked off Aveiro. The master and two men drowned. Rest of the crew saved, after being three nights and two days on the wreck. Part of cargo saved.

Unknown, supposed convict-ship.—The Martha (whaler) arrived in America, on the 10th of Feb. fell in with the remains of a vessel south of Equator, supposed to have been burnt; 14 drowned floating round her; picked up a ladder which had been used for a stage; likewise a tresseltree of the mizenmast, on which was written "H. M. Taylor, mate of the ship," the rest obliterated. The master of the Martha supposed her to have been a convict-ship from England.

VESSELS DETAINED BY ACCIDENTS, &c.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE DETAINED.	WHEN.	PARTICULARS.
Caledonia	Consar	—	Troon	Troon	6 April	Sunk.
Charlotte	Brown	London	Boston	—	22 Feb.	Run foul of.
Falcon	Jackson	Liverpool	Boston	St. Thomas	? 1833	Damaged.
Hunter	Shepherd	London	—	Geneva	31 Mar.	Damaged.
Luna	Collinson	—	—	S. Leona	Feb.	Aground in River.
Palm	Thompson	St. Thomas	Hambro'	Cuxhaven	10 April	Been on shore.

VESSELS SPOKEN AT SEA.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE SPOKEN.	WHEN	PARTICULARS.
				° °		
Arkwright	Birnie	Liverpool	Savana	47 N 24 W	24 Mar.	
Bencoolan	Tullis	London	Bengal	5 S 85 E	20 Nov.	
Brit. Monarch	—	London	Jamaica	44 N 12 W	11 Mar.	
Claudine	—	London	Madras	2 N 11 W	8 Feb.	
Conway	—	London	S. Seas	39 S 7 W	27 Aug.	
Diadem	—	Sunderland	Boston	48 N 25 W	11 Mar.	
Diana	—	—	Sydney	3 N 20 W	8 Feb.	
Exmouth	—	London	Bengal	36 S 22 E	3 Jan.	
Industry	M'Niall	Liverpool	New York	38 N 50 W	20 Mar.	
Marqs. Huntley	Hine	—	China	4 N 19 W	11 Feb.	
Nautilus	—	Liverpool	Bahia	3 N 23 W	12 Feb.	
Orontes	Currie	London	Madras	5 N 20 W	14 Feb.	
Pallas	—	Jersey	Newfndld.	45 N 24 W	21 Mar.	
Pernalla	—	—	C. G. Hope	1 S 26 W	12 Feb.	
Standard	—	London	Jamaica	25 N 34 W	24 Mar.	
Theodora	—	Liverpool	Jamaica	43 N 15 W	22 Mar.	

MOVEMENTS OF TRANSPORTS.

Amphitrite—Lieut. W. R. Cooley, 31st March sailed for Lisbon.
Arab—Lieut. W. C. Harris, 17th Nov. sailed from Mauritius for Ceylon.
Flora—Lieut. Wesley, Portsmouth.
Hope—Lieut. W. Ryder, Oporto.
Maitland—Lieut. Sanders, Deptford.
Marquis Huntley—Portsmouth.
Numa—Lieut. W. T. Woodman, 27th March sailed from Cork.
Orestes—Thames.
Prince Regent—Lieut. C. H. Binstead, Mediterranean.
Stentor—Lieut. E. B. Davison, Deptford.
Sylvia—Deptford.
Wanderer—Lieut. A. Young, West Indies.

Births.

On the 23d of March, the lady of Captain John Fisher, R.N. of a daughter.

On the 30th March, at Walmer, the wife of Lieut. Stephen Ross Watts, R.N. of a daughter.

On Monday last, at Buckland, the lady of John Thorp Duffill, Esq. Purser of his Majesty's steamer Salamander, of a son.

On the 23d ult. at Knockin, county of Salop, the lady of the Hon. Capt. Bridgeman, R.N. of a daughter.

The lady of Capt. H.B. Mason, R.N. of a son.

On the 14th ult. the lady of James Hall, Esq. surgeon, R.N. of a daughter.

The lady of Lieut. Herbert Jones, of the San Josef, of a daughter.

On the 3d ult. the lady of Capt. Henry Elton, R.N. of a son.

Marriages.

Lately, Lieut. Clarke, R.N. to Mrs. Hobbs, both of Whatley, Somerset.

At Budock, by the Rev. R. M. N. Usticke, Capt. Truscott, R.N., Inspector of the Preventive Service, to Eliza Jope, youngest daughter of R. J. Kinsman, Esq. of Falmouth.

On the 10th ult. at Dunchideock, Captain Keats, R.N. nephew to Admiral Sir R. G. Keats, G.C.B. and Governor of Greenwich Hospital, to Catherine, eldest daughter of James Pitman, Esq. of Dunchideock House, Devon.

On the 9th ult. at Charlton Musgrave, Somerset, Mr. Robert Sharp, Purser in the Royal Navy, to Miss Mary Meatyard, both of that place.

On Monday, by special license, at Lady Julia Petre's, in Grosvenor-square, Sir S. J. B. Pechell, Bart. to the Hon. Julia Maria, only surviving daughter of Robert Edward, 9th Lord Petre, and niece to the Duke of Norfolk.

Deaths.

On Monday, Lieut. Augustus Markette, R.N. Warden of H. M. Dock-yard, Deptford, at an advanced age, having been a Lieutenant for the period of fifty-three years.

At Broomholm, near Langholm, on the 6th ult. George Maxwell, Esq. of Broomholm. In the action with the Dutch, off the Dogger Bank, on the 5th of August, 1781, Captain Graham, of the Preston, being severely wounded, Mr. Maxwell assumed the command, and bravely beat off the enemy's ships which had attacked his, for which gallant conduct he afterwards received the public thanks of Admiral Hyde Parker. He was one of the oldest commanders in the British Navy.

At his house, at Iver, near Uxbridge, in the 77th year of his age, the Right Hon. Lord Gambier, G.C.B. Admiral of the fleet.—His Lordship was one of the few remaining gallant officers who had a command in the glorious battle of the 1st of June. On that occasion he commanded the Defence of 74 guns, which was the first ship that broke the line. The Defence was dismasted in the action, and had to contend with two French ships of the line, one on each side, both of which struck to him. At the seizure of the Danish ships at Copenhagen, Lord Gambier was the Commander-in-Chief of the Naval force, and for that service was rewarded with a pension of £2000 a-year, which latter he generously declined. His Lordship again commanded the Naval force against the French fleet in Basque Roads. His public life was distinguished by his loyalty and his devotion to the constitution; his private life by an uninterrupted series of acts of kindness and philanthropy.

A few days since, on board H.M.S. Stag, by a fall from the rigging, William, aged 14, son of Mr. William Walter, Assistant Master's Attendant, at this Dock-yard.

On the Coast of Africa, Lieut. George Buchanan, Commander of H. M. steam-vessel Pluto.

Lieut. Vickery, of Barnacle Hill, Semaphore Station.

Lately, at St. Andrews, Commander Thos. Methven (1812), aged 60.

In Devonport, J. Watson, a superannuated petty officer of his Majesty's Navy, commonly known as the veteran Watson, the oldest inhabitant of the parish, having attained the advanced age of 105 years. This extraordinary old man entered the naval service at an early age, and was in the glorious battle of the 1st of June. He was captain of the foretop of the Pegasus frigate when commanded by his present Majesty. He enjoyed a small pension, the last moiety of which he received at the dock-yard on the morning of the day he died, up to which time he enjoyed the most perfect health. The deceased received a slight wound at the landing of Turrat, at Carrickfergus.

At Bermuda, on the 11th January, in the 70th year of his age, Vice-Admiral Sir Wm. Chas. Fahie, K.C.B. and Knight of St. Ferdinand of Merit.

On the 11th ult. at the Royal Naval Hospital, Plymouth, of consumption, Mr. Thomas Holloway, Master, R. N. and late of the Rover.

LONDON: FISHER, SON, AND CO. PRINTERS, NEWGATE-STREET.

CAPE GRECO, CYPRUS, N. WARD Feby 1838.

Drawn by [illegible]

Day & Haghe Lithrs to the Queen

ISLANDS reported S.E. of CAPE GRECO (CYPRUS) Feby 1838

[illegible]

THE
NAUTICAL MAGAZINE,
&c.

JUNE, 1833.

HYDROGRAPHY.

Note.—All bearings are Magnetic, unless otherwise stated.

37.—New Islands in the Mediterranean, on the S.E. Coast of Cyprus.

We have received from the Secretary to Lloyd's the following account of the reported discovery of some islands in the Mediterranean, with the original drawing of them, done on board the vessel, from which the annexed sketch was made:

"On board Schooner Cora, Smyrna Bay, 6th March, 1833.

"Sir—Having seen in my passage from Scanderoon (or Alexandretta) toward Cyprus, on my way toward Smyrna, a most extraordinary appearance of land in a position hitherto not known, I take the liberty of waiting on you, by the earliest opportunity, with a correct view of it, as seen at sunset on the 15th, and at sunrise on the 16th February, 1833, by myself, passenger, and crew. The following is a copy of a note made at the time of observation:

"'At sunset, or thereabout, saw the appearance of land, bearing by compass S. by W. ½ W. we being about four miles off the south coast of Cyprus, between Cape St. Andrew's and Cape Grego: had no doubt of its being land, as the atmosphere was so clear as to preclude deception, but were quite surprised to see it in that situation. Night coming on, we were unable to ascertain any particular, and, with fine clear weather and light breeze from the eastward, kept on our course towards Cape Grego (Cyprus.) At day-break, or about 6 A.M., after a most anxious night-watch, our opinion was fully confirmed, by perceiving land on our larboard-quarter: the appearance from our position was that of two islands separated apparently by some distance, but with several rocks between them; near the larger one, the western part of the smaller island bore south forty-five degrees east, and the eastern part of the larger south sixty-two degrees east, making an angle of seventeen degrees; apparent distance about fifteen miles, Cape Grego bearing from us N.W. by W. about five or six miles' distance—the sky being beautifully clear, without any cloud, and the view perfectly distinct and well defined, (the bearings, as noted, are by compass.')

"It is worthy of remark, that on my passage from London towards Scanderoon, on 15th December, 1832, I passed over the identical spot, with fine clear weather, at eight in the morning, and, though at the distance of twenty miles from Cape Grego, and consequently on the same ground, nothing whatever was visible.

"I have the honour to be, Sir,
"Your most obedient humble servant,
"Elias Le Grand, Master of the Schooner Cora, of Jersey.

"John Bennett, Esq., Secretary to Lloyd's,
&c. &c. London."

We are content for the present to lay the foregoing before our readers, leaving it for time to decide whether these islands really do or do not exist; and we have added a sketch of Cape Greco, which may be of service to vessels on that coast.

38.—Telemaque.—*Extract from the Log Book of the Brig John Biggar, David Blair, Esq. Commander, (late of the Hon. E.I. Company's service,) outward bound to Bombay.*

"Tuesday, 6th September, 1825—The weather squally, with a high sea; wind north-west; latitude at noon 37° 37′ S.; longitude by chronometer 20° 27′ E. Midnight more moderate; sea going down.

"Wednesday, 7th Sept.—At 3 h. 30 m. a.m., while employed making sail, the sea became suddenly agitated, rising and breaking upon the deck with great violence. Hauled up the square mainsail, and wore ship to the larboard tack. Wind west. Stood to the north-east till 5 o'clock; the water getting smooth, wore ship, and steered E.S.E., going 5½ knots per hour. At daylight, found we were again entering the breakers, and again hauled round to N.E. by N. At 8 a.m., being quite clear of the danger, hove to, and sounded—no bottom with a hundred fathoms of line; from E.N.E to S.W. the sea appearing a complete sheet of foam. At 10 light breezes and fine weather; set the square mainsail, &c. &c. At noon the breakers extended in a N.E. and S.W. direction, as far as the eye could reach from the masthead.

"Lat. obs. 37° 22′ south; long. by chron. 21° 29′ 15″ east; long. by D.R. 22° 36′ east.

"At 6 p.m. nearly calm, the body of the breakers bearing S.E. distant about three or four leagues; sounded—no bottom at 100 fathoms. Midnight, again sounded, with 80 fathoms—no bottom.

"Thursday, 8th Sept.—At daylight no appearance of broken water from the masthead; altered the course to east, and made all sail.

"N.B.—At the time of being in the broken water, the smell of rock-weed very strong, and we particularly observed a variegated cloud to hang the whole day immediately over the spot; also a great number of birds hovering about it.

"I examined the breakers with good telescopes at the distance of three or four miles, and have every reason to believe that a very dangerous shoal is in existence in the before-named latitude and longitude. I suppose the centre to be in 37° 30′ south, and 22° east.

"Benjamin Hazell, 1st Officer, 1825

39.—Sailing Directions *for the South Side of* St. Domingo, *from* Altavela *to* Aux Cayes; *or, Observations on running down that part of the Island. By a Liverpool Trader.*[*]

A vessel having made Altavela, which is very conspicuous, because it is much higher than any other land in its immediate vicinity; when bound to "Jaquemel," it is most advisable for her to pass outside of it, as she is likely to meet with calms by keeping the shore aboard, particularly in the summer season. There is, nevertheless, a good passage between Altavela and Beata Island, and between the Frayles and the main land, there being no danger about the latter, but what is visible; and although the water appears white off the south end of Beata Island, a vessel may run down within two miles of it, or nearer if necessary.

The course from Altavela to Jaquemel is N.W. ½ W. by compass, distance 67 miles; not 80 miles, as represented on Steel's chart of 1818. This has caused many vessels to run to leeward of the port, which it has cost them two days to regain.

Jaquemel is easily distinguished from seaward in running down, as there is no sea-port or town all the way down from Altavela, and the coast in all that range has not the least appearance of cultivation; and towards the sea the numerous cliffs are all of a chalky nature, and maintain that appearance down to Jaquemel. This port lies within the Cape bearing that name. The Cape forms the West and S.W. side of the bay, but it affords no protection for shipping from the southerly winds. The town bears from the Cape N. by W. three miles; and when running down, the town is shut in by the Cape when the latter bears north.

The best distinguishing mark for this port is the termination of a range of mountains, that commences inland of Cape Beata, and, rising gradually to a great height, they extend nearly to Jaquemel. The base of these mountains form the coast at least 30 miles to windward of the port, and the highest mountain in particular terminates very abruptly inland, and a little to eastward of the port.

Having reached Cape Jaquemel, a vessel may run in to the middle of the bay, leaving the Cape on the larboard hand; but as a reef, commencing on the east shore, about a mile from the town, extends partly across the bay fully half a mile in a W.S.W. direction, she should pass round its west end, and anchor inside of it abreast of the town. A good berth is to bring a large house close to the wharf, to bear from N.E. to N.N.E., distant about half a mile.

Vessels bound here get a pilot after entering the bay, but have to run well in before they come off.

The next bay to Jaquemel, is about 15 miles to the west of it, and is named, Bayonet; it is frequently taken for the former port by strangers: few vessels visit this port, excepting coasters, to carry away the produce, and bring supplies.

The course from Cape Jaquemel to the Isle of Vache is W. by S. ½ S., distant 58 miles. When abreast of the east end, a vessel should run down along the south side of the Island, giving the S.W. point a berth of three-quarters of a mile: here the bottom may be seen, but there is plenty of water over it.

After rounding the S.W. point, about a mile off, haul up for the N.W. point; between these two points, on the west side of the Island, good anchorage will be found nearly every where, in from 2½ to 6 or 7 fathoms, not more than a mile from the shore; and the white ground only should be anchored in, the black being rocky. Vessels seldom anchor here, unless too late to run into Aux Cayes with daylight.

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[*] We regret that we have not the Author's name of the above useful directions, and trust that he will enable us to give it in a future number of our work.

After passing within 1½ miles of the N.W. point of Isle Vache, a vessel should haul up N. by E., or should keep the remarkable white cliffs on Cavaillan about a point on the starboard bow; and stand on in this direction till the town of Aux Cayes bears west. The town becomes visible when leaving La Vache Isle, and lies very low, as is the land all round the bay on the sea side; but it is surrounded by very high mountains in the interior all the way round from point Abacou to the eastward as far as the eye can reach, and rather lessening in height to the E.N.E. of Aux Cayes. The reason for hauling up N. by E. for the white cliffs, is to avoid an extensive shoal that lies in a S.E. direction from Aux Cayes, and is always visible, there being two parts of it above water; and when the town bears due west, that course may be run on under easy sail, till the pilot gets on board,* who takes the vessel into anchoring ground within the harbour reefs.

This harbour is also exposed to S. and S.E. gales, and seldom a vessel escapes, that is caught in a hurricane. In running across from Isle La Vache to the white cliffs, four to six fathoms will be found with the bottom visible, till about half way across. The colour of the water changes then to a light green, the bottom is lost sight of, and the depth is from 7 to 16 fathoms.

The anchorage to the eastward of the town is a mixture of clay, sand, and shells; with the white cliffs bearing north, and the town W. by S., is the best berth to anchor in for a vessel not bound in, and is the best berth also for leaving the bay from, to clear the reef already spoken of, lying about three miles S.E. from the town.

In going to sea from Aux Cayes, the pilot takes the vessel clear of the reefs that form the harbour; after this, she must work to windward, making short tacks if she has not the advantage of the land breeze, to sail to the berth above stated. In hauling over for the Isle La Vache, care must be taken that the white cliffs are not brought to the east of N. by E., or the Island to the east of S. by E.; and as soon as the town bears N.W. with the above bearing, a vessel will be clear of all the reefs, and may make the best of her way round point Abacou, off which point a reef extends about a mile, but all the danger is visible.

The best passage into Aux Cayes is to run down along shore after passing Cape Bayonet, and when the Isle La Vache is seen, and the keys to the north of it, they should be left on the larboard hand, the vessel keeping within a mile of the shore on the starboard hand, which here is formed by several islands, but high land. The keys north of La Vache being low and small, with bushes on them, when abreast of Pascal Point, a vessel will then have Water Key, the northernmost Kay on the reef to the north of La Vache, on her larboard bow, and Aux Cayes nearly west, which may be steered for till arriving at the part already described. There is good anchorage all the way down from Pascal Point to Aux Cayes, and a vessel may choose her depth of water by hauling in or off shore.

The latitude of Altavela, Jaquemel, and La Vache are correct, as laid down in the chart referred to, but the longitudes of the two former points are incorrect. However, as Altavela is a good point of departure, the distance given above to Jaquemel, and thence to La Vache, may be depended on, as the difference of longitude was determined by a good chronometer; with sights taken on both sides of the meridian, and the mean taken as the truth.

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* Here, as at Jaquemel, they don't come far out for you.

40.—SAILING DIRECTIONS FOR HAVANA, ISLE OF CUBA. *By a Liverpool Trader.*[*]

It would be superfluous to give a description of the land on the Cuba side, beating up to Havana from Cape Antonio, as it is already well known: but not having met with a book of directions that gives any thing like a good description of the Havana; for the information of ship masters bound to that port, the following directions may be acceptable to them.

This is one of the finest harbours throughout the West Indies; it is capable of containing several hundred sail, completely protected from all winds, and is very seldom visited by the destructive hurricanes so frequent in Jamaica, and other neighbouring islands. The entrance of Havana harbour lies N.W. and S.E. nearly, and is about half a mile wide, being from the Morro Castle to what is called the Punta, or opposite shore, (which bears from the Morro about S.S.W.) and it continues the same breadth, or a little wider, all the way up to the end of the Public Wharf, where it is at the narrowest. It is there less than one quarter of a mile, and the wharf, which is on the starboard hand going in, is about one mile and a quarter from the Morro.

Above the wharf the harbour opens out into a large basin, where a vessel may choose her anchorage; but as merchant vessels have no choice, if with a cargo, they anchor abreast of the wharf; and if in ballast, on the opposite or *Casa Blanca* side. The Public Wharf, as before stated, is on the starboard hand going in, and there is sufficient depth to haul the largest merchant vessel bows on to discharge or load, and there is room for mooring upwards of 100 sail, large and small, in the same manner.

All square-rigged vessels bound to Havana, after having made the Morro, which is easily known from sea, by the Maiden Paps in the interior, bearing a little E. of S. from the Morro, must wait the sea-breeze, which commonly sets in about 11 A.M. and takes off about 4 P.M., and most commonly from the N.E. It is best to haul close round the Morro, and keep on the Morro side all the way up to the guard-ship, if the wind permits, there being no danger, as there are 4 to 5 fathoms alongside the rocks. About one-third the way up there is a large red buoy, with a flag on it, which may be passed on either side, within a ship's breadth of it, as it is placed on an old wreck, now mostly decayed. It lies about one-third the way across from the Morro shore, and about half-way up there is a shoal of sand and mud, which has also a buoy on it, with a small flag. This shoal is full one-third the way across from the *Punta*, or Havana side, and is more in the fair way of shipping than the red buoy, and vessels are often baffled hereabouts. There is good anchorage all round the shoal, should it be required; but a vessel coming in after passing the Morro and the red buoy, if she be taken aback, it is better to run out again, and come in the same way again, as by that time the wind may so far favour her, as to allow her to lay all the way up, and she must then keep all sail on, so as to be under command with her anchor ready, and a good range of cable. But, should the wind be favourable for running in, it is only necessary to keep about mid-channel, and, before coming abreast of the wharf, the harbour-master will go on board, and will give directions where to anchor.

In other circumstances, there is good anchorage all the way up, from the red buoy, and a vessel obliged to come to must wait till the evening, and warp up; but the anchorage outside the red buoy is not good, being deep water, rocky, and bad holding ground. The guard-ship lies about two-thirds up the harbour from the Morro to the wharf, and about a cable's length from the north shore. Between her and about four berths above the wharf all vessels moor head and stern with bower or stream anchor, and not more than three abreast from the *Casa Blanca* side, but higher up the harbour the vessels lie at single anchor. The depth of water from the Morro up to the harbour is from 16 to 10 and 6 fathoms; in the harbour, from 10 to 6 and 5 fathoms, all tough clay mixed with shells.

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[*] This paper was accompanied by the foregoing.

No directions are requisite for going out, as it is either done in the morning or evening, when the wind is fair out; and a vessel is clear off; as soon as she is past the Morro. There is a revolving light on the Morro, which shews its brightest side once every minute. Although a very inferior light, it yet serves to point out the Morro, either by day or night; and may be seen, when clear, 3 to 4 leagues off distinctly.

41.—DIRECTIONS FOR VESSELS BOUND TO THE RIVER PARA, *by* CAPTAIN R. THOMAS, *of the Brig Margaret Richardson, of Glasgow.*

When bound to Para from the northward, vessels should cross the Equator in 46° W., then steer S.W. until they arrive in 28′ of south latitude; soundings may then be found in 17 and 20 fathoms—fine sand, with small specks. Steer a west course from thence, keeping the lead going, and do not approach the shore nearer than in 12 fathoms water. White sand-hills to the westward of the Bay of Caita will soon be seen appearing from the masthead like breakers, at the foot of high mangrove trees. The land of Caita must not be approached, for the water is very shallow, and the soundings very irregular off this bay, and the flood-tide sets in to the west. By steering a west course, and keeping a good look-out, Point Atasia will soon be seen: it is the highest land on the coast from Mount Gurapi, with steep red cliffs at the end, and to the westward of it.

About two miles further to the westward is the village of Salinas. The pilot station is situated on a steep cliff, and the houses covered with red tiles. Near the middle of the village a church, with the steeple, may be seen.

Abreast of this point, distant from it about two miles, is a bank of hard sand and stones, with 4½, 5, and 6 fathoms water: this bank extends to the eastward as far as Caita, and the west end bears south from Salinas. Within this bank is a channel with 9, 10, and 11 fathoms water, soft mud; but being so near the shore, I would not recommend it.

After having reached Salinas, the pilot station, should the weather be fine, and light winds, I would advise anchoring with the village to bear S.E., and not in less than 9 fathoms. For should it come to blow during the night, which is often the case in the rainy season, and a vessel should part her cable, she will have sufficient room to make sail, and stand to the northward under easy sail until morning, and by that means will avoid the reef which lies off the Island Praia Grande, the nearest island west of Salinas. Should it be blowing strong on arriving off the pilot station, and past noon, I would recommend a vessel to lie off and on, under easy sail, until next morning, for it would be too late to attempt to run for the banks.

In leaving Point Atasia for Para River, I recommend making sail early in the morning, steering W. by N. ½ N., keeping the lead going, and being very cautious in steering and sounding, as the tides here run very strong, and are very uncertain in their direction, owing to the many small rivers and banks adjacent. A vessel should not come nearer the shore than 10 or 11 fathoms, until she comes abreast of Maranduba, or what some call False Salinas. It is the second island after passing the village, with two white patches, or sand hills, much resembling in appearance the sand-hills to the eastward, but smaller.

These two sand-hills have been mistaken by strangers, and have proved fatal to many valuable lives, for there is no landing in their vicinity. It was off here that the brig Warrior, Captain Mann, in 1827, unfortunately lost his mate and three men, by the swamping of the jolly-boat in attempting to reach the shore in search of a pilot.* Having passed these sand-hills, continue a course towards the Braganza banks or breakers, still keeping the lead going.

From thence to the banks, while in the fair way, 13, 15, and 17 fathoms will be found; and when these sand-hills bear about S.E. by E. the breakers will be seen from the masthead on the larboard bow. These breakers must be left on the larboard hand about half-a-mile distant. The channel here between the Braganza banks and Tigoca shoals, on your starboard hand, is not two miles wide. Having reached the breakers, which is the only guide for entering the river, a vessel may steer a little more southerly, keeping the lead going, for she will then have 15 fathoms foul ground in mid-channel; having got well round these breakers, steer a S.W. ½ S. course up the river, keeping the larboard shore on board.

The foregoing directions are the result of my experience in 17 voyages that I have made to Para. I never once saw the tower on Point Atasia; and the opinion that a gun is fired when a vessel approaches it, is quite erroneous.

RICHARD THOMAS,
Brig Margaret Richardson, of Glasgow.

42.—LIGHT HOUSES IN THE BAY OF FUNDY.

Cape Sable Seal Island Light.—The first Light in approaching the Bay of Fundy is on the South Point of the Seal Island. This light is elevated about 80 feet above high-water mark, and may be seen in approaching the island from any point of the compass. A very dangerous rock, under water, but upon which the sea always breaks, called the Blonde Rock, lies about 2 miles S.S.W. by compass from the light-house. Between this rock and the island there are some dangers—the ground is rocky throughout, and large vessels therefore ought not to attempt passing between them.

Bryer Island Light.—In advancing up the Bay, the next light is situated on Bryer Island, about half a mile north-east from the north-west point thereof, with an improved lantern and lamp; this light will therefore be much more beneficial to the trade of the bay than formerly.

Annapolis Gut Light.—The next light on the coast of Nova Scotia is placed at the west side of the Gut of Annapolis, from Bryer Island north-eastward. This coast is very bold, and not indented: this light is therefore chiefly intended as a guide into Annapolis Bason.

Gannet Rock Light.—This light bears from the light on Bryer Island N.W. ½ W. 21 miles. It is intended to warn ships of their approach to a very dangerous range of shoals and ledges, which extend from the Old Proprietor to the Seal Island off Machias, a distance of about 20 miles.

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* See Nautical Magazine, No. 10, for the Pilot Signals.

Bearings from Gannet Rock Light-House.

To the Old Proprietor, which dries at ¾ ebb (very dangerous) E. by N. ¼ N. 7 miles.
.... Black Rock, (always above water 25 feet) off White Head, N.E. ¼ E.
.... South-West Head of Grand Manan, N.W. ½ N.
.... Northernmost of the Murr Ledges, dry at ¾ ebb, N.W. by W. ¼ W.
.... To the Southernmost of ditto, called St. Mary's Ledge, always out of water, S.W. by W. ½ W.
.... Machias Seal Island Lights, distant about 13 miles, W. by N. ¼ N.

Note.—Between the northernmost and southernmost of the Murr Ledges there is a range of dangerous rocks and shoals, many of them always above water, and which extend westward from the Light-house about four miles; from this range, farther westerly, about three miles, lies a dangerous breaker called the Roaring Bull. This may be avoided by keeping three remarkable headlands near the south-west end of Grand Manan open. The red glass having been removed from the lantern, this light is now a bright white one.

Head Harbour Light.—Next in order, after passing Grand Manan, is Head Harbour light. This is placed on the north-east extremity of Campo Bello, and is a guide to vessels entering the main channel to West Isles, Moose Islands, and the inner Bay of Passamaquoddy; it enables vessels also at all times to enter Head Harbour.

Point Le Preau Lights.—Upon this projecting Head Land two lights have lately been placed, one above the other, and distant 18 feet. Both lights may be seen from every point of the compass where they may be useful.

Partridge Island Light.—This light at the entrance of the River and Harbour of St. John, having been established upwards of forty years, requires no particular notice.

Beacon Light.—Within Partridge Island, and upon a spit, or bar, which extends about half a mile S.S.E. from Sand Point, and which dries at ¾ ebb, stands the Beacon Tower. Upon this tower a light is established, which is eminently useful to the coasting trade of St. John, and to all other vessels having pilots on board, as it enables them to enter the Harbour of St. John at all hours of the night.

West Quoddy Light.—This is an American light, and is placed on the west side of the entrance into the St. Croix by Lubec and Eastport. A new light-house has lately been erected here, and the light much improved.

Two fixed-lights upon the Machias Seal Island were put into operation in October last: they are elevated about 45 feet above high water, and bear from each other E.S.E. and W.N.W. distant 200 feet, by which they will be immediately distinguished from all other lights upon the coast (British or American)—the following are bearings from them, viz.:

To the Southernmost Murr Ledge, (St. Mary's) E.S.E. easterly.
.... Gannet Rock Light, E. by S. ¼ S. 13 miles.
.... Southern Head of Grand Manan, E. by N. ½ N.
.... Northern ditto, N.E. ½ E.
.... N.E. Rock, distant 2 miles, N.E. by N.
.... Little River Head, N. by W.
.... Libby Island Light-house, (American,) N.W. by W.

Vessels in standing in to the northward, between these lights and the Gannet Rock, should tack, or haul off, the moment they bring these lights in one, as they will then be not more than ¾ths of a mile from the Murr Ledges, if more than 5 miles to the eastward of the lights.

The Commissioners of Light-houses for Nova Scotia, under date of the 30th October, 1832, gave notice, that the Light-house building on Low Point, at the entrance of Sydney Harbour, Cape Breton, would be finished on the 1st of November, and lighted on or about the 15th of that month. It would be a fixed light on the east point of the entrance of the harbour.

A White Beacon has been erected on the East Head, leading into Louisbourg Harbour, upon the site of the old French Light-house, which may be seen at a very considerable distance.

TIDE-TABLE FOR JUNE, 1833.

Mean Time.

Week D	Month D	PLYMOUTH *Dock Yard.*				PORTSMH. *Dock Yard.*				SHEERNESS *Dock Yard*				LONDON *Bridge.*				ABERDEEN.				LEITH.				Month D.	D's Age at Noon
		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.			
	—	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m	h	m.	h.	m.	h.	m.	h.	m.	h.	m.	—	
Sat.	1	4	26	4	50	10	37	10	59	11	55	....		1	4	1	23	0	7	0	28	1	42	2	3	1	12·9
S.	2	5	11	5	32	11	19	11	39	0	17	0	38	1	42	2	1	0	48	1	7	2	23	2	42	2	Ful
M.	3	5	55	6	16	....		0	1	1	1	1	20	2	24	2	41	1	27	1	45	3	2	3	20	3	14·9
Tu.	4	6	34	6	53	0	21	0	42	1	38	1	58	3	0	3	13	2	4	2	22	3	39	3	57	4	15·9
W.	5	7	11	7	29	1	2	1	21	2	16	2	34	3	34	3	53	2	39	2	57	4	14	4	32	5	16·9
Th.	6	7	45	8	2	1	40	1	58	2	51	3	10	4	12	4	30	3	15	3	32	4	50	5	7	6	17·9
F.	7	8	19	8	37	2	17	2	36	3	29	3	50	4	52	5	13	3	50	4	9	5	25	5	44	7	18·9
Sat.	8	8	56	9	14	2	58	3	19	4	9	4	27	5	36	5	58	4	28	4	48	6	3	6	23	8	19·9
S.	9	9	34	9	54	3	39	4	1	4	47	5	8	6	23	6	51	5	10	5	34	6	45	7	9	9	20·9
M.	10	10	15	10	40	4	25	4	49	5	28	5	56	7	19	7	48	6	2	6	32	7	37	8	7	10	LQ
Tu.	11	11	8	11	39	5	16	5	46	6	19	6	46	8	18	8	48	7	6	7	41	8	41	9	16	11	22·9
W.	12	....		0	8	6	19	6	52	7	17	7	51	9	20	9	52	8	19	8	55	9	54	10	30	12	23·9
Th.	13	0	54	1	30	7	24	7	56	8	29	9	7	10	20	10	49	9	28	9	59	11	3	11	34	13	24·9
F.	14	2	2	2	33	8	26	8	55	9	40	10	11	11	18	11	45	10	28	10	53	....		0	3	14	25·9
Sat.	15	3	4	3	32	9	22	9	47	10	38	11	5	....		0	8	11	16	11	40	0	28	0	51	15	26·9
S.	16	3	59	4	23	10	11	10	34	11	28	11	53	0	25	0	45	....		0	1	1	15	1	36	16	27·9
M.	17	4	48	5	10	10	57	11	19	....		0	17	1	4	1	30	0	22	0	44	1	57	2	19	17	N M
Tu.	18	5	33	6	1	11	42	....		0	42	1	7	1	51	2	16	1	7	1	29	2	42	3	4	18	0·5
W.	19	6	26	6	47	0	7	0	32	1	30	1	51	2	38	2	59	1	53	2	16	3	28	3	51	19	1·5
Th.	20	7	8	7	28	0	55	1	18	2	13	2	34	3	21	3	44	2	39	3	3	4	14	4	38	20	2·5
F.	21	7	49	8	9	1	40	2	2	2	55	3	18	4	9	4	36	3	26	3	50	5	1	5	25	21	3·5
Sat.	22	8	30	8	52	2	25	2	50	3	42	4	5	5	8	5	40	4	14	4	37	5	49	6	12	22	4·5
Su.	23	9	13	9	37	3	15	3	38	4	26	4	50	6	8	6	36	5	1	5	27	6	36	7	2	23	5·5
M.	24	10	1	10	28	4	5	4	33	5	14	5	39	7	6	7	38	5	56	6	27	7	31	8	2	24	FQ
Tu.	25	10	58	11	33	5	3	5	36	6	8	6	40	8	9	8	39	7	0	7	37	8	35	9	12	25	7·5
W.	26	....		0	14	6	13	6	50	7	15	7	53	9	10	9	46	8	15	8	54	9	50	10	29	26	8·5
Th.	27	0	56	1	29	7	25	7	56	8	35	9	16	10	14	10	45	9	30	10	5	11	5	11	40	27	9·5
F.	28	2	10	2	42	8	34	9	3	9	49	10	21	11	13	11	40	10	35	11	1	....		0	10	28	10·5
Sat.	29	3	14	3	42	9	31	9	56	10	48	11	12	....		0	6	11	27	11	50	0	36	1	2	29	11·5
Su.	30	4	7	4	30	10	18	10	40	11	34	11	57	0	31	0	56	....		0	12	1	25	1	47	30	12·5

The times of high water, nearly, at other places on the coast, may be found with the assistance of the above table within certain limits. Thus, the times in the Plymouth-Dock column are to be used for all places between the Land's End and Lyme Cob; and those in the Portsmouth column, for all places between Portland Bill and Beachy Head; by adding or subtracting the time opposite each place, according to the sign + or —.

The times of high-water at Plymouth Dock-Yard are to be used with the difference against the following places, to find the time of high-water there on the same day:—

	h.	m.		h.	m.
Mounts Bay and Lizard	— 1	3	Eddystone	— 0	18
Falmouth Harbour	— 0	18	Dartmouth and Torbay	+ 0	27
Fowey Harbour	— 0	18	Exmouth	+ 0	52
Cawsand Bay	— 0	10	Lyme Cob	+ 0	27

The times of high-water at Portsmouth Dock-Yard are to be used as above, for the following places:—

	h.	m.		h.	m.
Portland Bill	— 6	10	Cowes	— 0	55
Weymouth Harbour	— 5	10	Southampton	— 1	0
Christchurch and Poole Harbours	— 2	50	Bembridge Point	— 0	40
Needles Point	— 1	55	Selsea and Arundel Harbours	+ 0	5
Hurst Chamber	— 1	40	Shoreham Harbour	— 0	25
Lymington	— 1	25	Beachy Head	— 1	25

VOYAGES AND MARITIME PAPERS.

I.—EXCURSION TO THE SUMMIT OF THE PETER BOTTE, MOUNTAIN, MAURITIUS.

FEW events at the Mauritius have been talked of more lately than that of the ascent of the Peter Botte mountain, by a party of officers, of which I formed one. It had been attempted by one of our party, the Surveyor-General, Captain Lloyd, who succeeded in arriving at the shoulder of the mountain in 1831; and it is also reported that some daring Frenchman had reached the summit: but this is only believed by his own countrymen, who say that he not only did so, but made a hole for a flag-staff in the rock. There is a tradition also, of a man named Peter Botte, having ascended this extraordinary mountain, and that he lost his life in returning, but this is not credited; and although several attempts have been made since the reported visit of the Frenchman, not one of them has succeeded before the present. The Peter Botte is situated on the north-west part of the island, and rises over the town of Port Louis in a remarkable peak, to the height of more than 1800 feet from the principal group of mountains in the island. It appears from the achorage ready to tumble down on the town, the sides of the cone which forms the summit being nearly perpendicular.

A party of us, bent on achieving this exploit, made our preparations in the way of provisions, sufficient to last for two or three days, including also a tent, scaling ladder, crow-bars, ropes, &c. and set out from Port Louis, determined, if man could do it, to plant the British flag on the lofty peak of the Peter Botte. The house of a Frenchman, situated on the plain beneath the mountain, received us for the night, and gave us the opportunity of mustering our whole force, which consisted of a number of Sepoys and some negroes—all of whom had plenty to do in carrying our various equipages. Whether it was from the attacks of those abominable disturbers of repose that are well known in other houses besides this Frenchman's, or whether it was from the thoughts of our expedition, I cannot say; but few of us got much rest in the night, and we all gladly sallied forth the following morning on our enterprise. And now commenced our toil.

The track we were obliged to follow lay through a ravine, which, in the rainy season, had formed the bed of a torrent of no trifling consideration; and its steep ascent, added to the fragments of rocks, being loose, and giving way under our feet, rendered it a difficult, if not a dangerous part of our road. There was not a little danger, either from the dislodged fragments of stones, which rolled down as they were displaced, threatening destruction to those beneath them, and one or two of our party narrowly escaped being knocked down by them. Having scrambled up this ravine as well as we could, we had next to keep in a narrow ridge along the face of the mountain, holding on by the brushwood; the rock on one side rising above our heads as steep as a wall, and on the other a precipice, of nearly a thousand feet, with the tops of the trees beneath, ready to receive us if we fell.

We soon gained the shoulder of the mountain, where we found the ladder which had been left the preceding year by Captain Lloyd, and enjoyed a view which no language could describe. The part on which we stood is a narrow neck of the mountain, not more than a few yards in length, and about two paces across. Behind us was the deep ravine up which we had passed, and before us a precipice of 1500 feet, terminated by the plain. On one hand, the neck ended in another precipice nearly as abrupt as that before us, and on the other a narrow ridge of rock, terminating in a wedge-like form, extended some three or four hundred feet over our heads; on the top of it rested the huge pinnacle, of the Peter Botte, and there lay our road! We had pretty good proof before us that our task was still only begun, and that the most difficult part of it was yet to be achieved. It was a grand and awful sight to look down on the pigmy objects beneath us, and no less so to contemplate the Peter Botte towering majestically above us. To have mounted his summit without the aid of ropes would have been impossible, and accordingly these articles were now speedily put in requisition.

One of our negroes immediately mounted the ladder which rested on a narrow ledge not twice its width, and having previously fastened a line round his middle, commenced his dangerous climb above it, for the ladder was not more than twelve feet high as it rested against the ridge. Had this fellow trusted to a loose stone, or taken one false hold, he would in all probability have been dashed to atoms in his fall down the precipice. However, the dexterity belonging to his class carried him safely on, and after a short time we heard the welcome sound of "All right" from under the pinnacle. His duty was to make fast the line to a part of the rock which he had attained, and by means of it we scrambled up to him one after the other. This was really most awful work. The steep ridge up which we were thus climbing was in some places not a foot across; and as we held on by the rope, it would have been easy to pitch a biscuit on to the plain on one side, and down into the ravine on the other, both at an awful depth below us. We had now arrived under the mass of rock which forms the pinnacle of the mountain, and a curious one it is. In the first place, it is in itself about thirty-five feet in height, overhanging its base on every side. It is surrounded nearly by a sort of platform rock, a few feet in width, which is terminated on all sides by the precipice, except where it is joined to the ridge up which we had climbed. We had yet to gain the summit of the pinnacle rock, the object of all our trouble, and we proceeded to concert measures for effecting this by means of our ladder and ropes, which were speedily got up the ridge.

On surveying the pinnacle, we found, that, although it overhung its base so considerably, yet in one part opposite to the ridge it did not overreach the precipice, and here was our only chance of scaling it. But to fix our ladder puzzled us not a little. Captain Lloyd had prepared, however, for this difficulty, and had recourse to an experiment. Having provided himself with some arrows, with thongs fastened to them, his plan was to fire one from a gun over the pinnacle, and, its flight being arrested by the thong, it would fall on the opposite side. This was resolved on, and having made fast a line round his own body, as we held on the line, he leaned backwards over the precipice, and fired the arrow over the least projecting part of the pinnacle. This was nervous work; for had the line broken, he would have had a clear fall of 1800 feet! The experiment failed twice, and was given over, and he endeavoured to throw a large stone over the pinnacle, fastened to the end of a line, on the principle of heaving the lead, which seemed to promise success. His dexterity at length, after several trials, succeeded, and the stone with the line fastened to it hung down on the opposite side of the pinnacle. The joy which this occasioned was quite laughable; one would have imagined that our very lives depended on it, instead of the discredit of returning from a failure. But our point was gained, and we had now only to proceed with caution. A stronger line was fastened to the one lying over the pinnacle, and carefully drawn up it, and to the end of this a good stout rope was hauled across, by means of which our rope-ladder was hung securely from the top, ready for us to mount. The first to do this was Captain Lloyd, and he was quickly followed by the rest of our party. No schoolboy ever yet succeeded in gaining the dangerous top of a tree, in search of a bird's nest, with greater glee than ours on arriving at the top of the pinnacle; and the reward which we had for it, in the splendid view around, was well worth all the risk and trouble we had undergone.

The first thing we thought of was the union-jack we had brought with us; and the flag of England soon fluttered in the breeze from a boat-hook fixed in the rock. No sooner was it unfurled, than it was saluted by the guns of the Undaunted frigate lying in the bay. We returned the salute as well as our limited number of fire-arms permitted; and having got up a bottle of wine, we christened the rock King William's Peak. Of course, we drank his Majesty's health, and gave three hearty good cheers for our success; which were responded by our negroes on the shoulder or platform beneath the pinnacle.

We next determined on passing the night on King William's Peak; and great-coats, blankets, with a goodly stock of brandy and cigars, were carefully conveyed to the top; when next we bethought ourselves of dinner, which was preparing for us below on the platform. We finished our repast, and, as the dusk of the evening was gradually coming over us, we again mounted to our nest on the peak, taking with us a little wood to make a fire. This done, we began to nestle down into our places for the night, waiting for an appointed hour when we were to make the signal of our success to the town and ships. The prospect beneath us, as we lay enjoying cigars and brandy-and-water, was of the most magnificent description. The sky was clear, and the moon shone brightly, lighting up the scene around, except where the mountains intercepted her silvery rays, and contrasted their broad dark shadows with her pale light reflected from the objects beneath us. It was a scene on which a romantic mind would dwell with ecstacy.

We were thus enjoying the still and beautiful night on our lofty and isolated perch, when, on a sudden, a bright flash was observed, followed, after an interval, by the solemn sound of the evening gun. No sooner was this heard, than up went a rocket from our crow's nest; and soon after we burnt a blue light, the effect of which was beyond description. Then indeed did we see in reality, by its powerful glare, our truly awful situation. The pinnacle was lit up, and ourselves discovered on its narrow top, a motley group, at which the very birds, frightened from their nests by the uncommon appearance, came screeching around us!—and again all was darkness. Again we burnt a blue light, and sent up two more rockets, which expended our stores of this kind, and we were fain to relapse into the quiet, peaceful moonlight. Having completed all our wishes, we were now satisfied, and began to wrap ourselves up for the night. But one of our party was a determined sleep-walker, an accomplishment which on this occasion might have easily proved fatal. To secure him from walking off the pinnacle, we lashed him to the leg of another of the party, and consigned ourselves to rest. Vain attempt! After continually tucking our clothes about us the whole night, daybreak found us awake, cold and stiff, and ready to eat any thing that might be set before us.

The feat, however, was accomplished, and our care now was to leave visible signs of our success, and to get safe down again. We contrived, after no little labour, to make a hole in the rock, in which we stepped a flag-staff, with a union-jack fastened to it, besides leaving our ladder there, with a water-barrel lashed to it, as a land-mark for the ships, to render the Peter Botte still more conspicuous than before!!!

II.—STEAM-ENGINES IN THE MINES OF CORNWALL.

The following letter relating to the improvement of the steam-engines in the mines of Cornwall, by a very simple contrivance, is well deserving of the attention of engineers and scientific men.

To the Editor of the Nautical Magazine.

SIR—It was my intention to have forwarded to you the enclosed statement relating to several steam-engines at work in the mines of Cornwall, and merely to have asked for information on similar points in steam-boats. Mr. Chatfield's paper has induced me to extend my observations, and to attempt to explain why an increase of work has been obtained since 1812; and to open the question of how much coal is used in the Cornish engines compared with steam-boat engines; and also why the latter consume a quantity so much larger than is proportional to the disadvantages under which they labour. To the mines, the saving of expense in coal is the only important object. To steamers, the length of the voyage, dependent on the consumption of coal, is even more important than the saving of expense; though the short quick stroke in two cylinders, and the change of motion by a crank, will invariably cause a greater comparative consumption of coal to the estimated horse-power, than the long slow stroke of the single acting engine with the reciprocating motion applied directly through a beam to the pumps. The statement of work performed by the latter, is obtained by combining the number of strokes and the quantity of water lifted at each time, divided by the quantity of coal in bushels, and is always expressed by the number of million pounds weight of water lifted one foot high by a bushel of coal. In 1812, a comparative statement of the work of several engines was published by the Adventurer, on the advice of Mr. Lane, and since that time a gradual but almost incredible increase of work, from 7 or 8 millions to from 60 or 90 millions of work, has been obtained from one bushel of coal. A counter is fixed on every bob, which registers the number of strokes, the key of which is in the possession of a person appointed (a son of Mr. Lane) to calculate and publish the monthly work of each engine. An account of the increased work has been published by Mr. Taylor in the Mining Review; who has proved the correctness of the engineer's calculations, by a reference to all the new mining accounts, and which shew a proportional decrease of money paid for coal to that paid at a former period to 1812.

A great moral effect has been produced by the knowledge of each engine's work, tending to excite a spirit of competition among the engineers, and care and attention among the engine-men, or persons who manage the working.

The engines in the larger mines are generally made in them under the engineer's direction, and remain working under his control. Every advantage also has been taken of observation, to introduce improvements; the most prominent and simple of which are, the use of circular boilers, and that of clothing the boiler, steam pipes, cylinder, &c. &c.

The circular boilers in large engines are generally three in number, being from 40 to 50 feet long, and 6 feet in diameter. The flue is within, and is extended throughout their whole length, and returned round them outside, allowing, from their very superior strength, the use of steam 20 or 30lbs. to the inch more than, and exclusive of, the power of the vacuum, and an effective use of expansion in the cylinder.

Clothing the boilers, steam-pipes, and cylinder prevents the loss of heat, and consequently produces a condensation of steam. This scheme for preventing the radiation of heat, desired by Mr. Chatfield, has been in use for three years at Wheal Towan, where an increase of work of twenty millions was obtained, chiefly by a clothing of saw-dust. An experiment with the boilers of a new engine at Corrols was tried, and it required 24 bushels of coal to keep up the steam to its guage fit for work, while the boilers were exposed. On being clothed in the common manner with saw-dust and 2½ feet of cinders, 5 bushels were found sufficient for the same period.

The supply of steam is cut off in the new engines at from ⅕ to ¼ of the stroke of the piston, the remainder of which is effected by expansion; so that the piston is brought up easily with 5 or 8lbs of steam, having the advantage of starting with 20 or 30lbs of steam, to overcome the inertia of 240 fathoms of pump-rods, balance, bob, &c. The steam acts on the top of the piston, and draws up a beam, one bob, the pump-rods, and water in the lowest lift; the weight of the rods in the descending or return stroke forces up the water in the other lifts by "plunger-poles," a forcing pump similar to that used by Bramah in the hydrostatic press. A lift is a term used for a set of pump-rods between each cistern, from 30 to 40 fathoms. The size of the cylinder is from 40 to 91 inches: the length of stroke from 8 ft. to 10. 6. feet. There are many 90 inch cylinders; but one mine, determined to have the largest engine, erected a 91 inch; a tolerable proof of the spirit among the engineers. The 80 inch cylinders are now more common, as the larger pump-rods are expensive, and so much water collects in case of an accident. A pump-rod of Memel balk, 16 inches, being often snapped off quite short, not from decay, a circumstance which is unknown in timber immersed in copper-water.

It is proper to state, that the Cornish engines in 1812 were in a most wretched state, as much inferior as they are now superior to the rest of England. These improvements, which can be added to all engines now in use, were unknown for many years out of this country; and when heard of, met with disbelief. The names and merits of the respective engineers are well known, and will be appreciated elsewhere, whenever a fair inquiry is made into how much has been effected by them. Their engines are now in contract with those of Liverpool and Leeds, several in the lead-mines in Flintshire, and one in the fens near Wisbeach. This last has so far exceeded its stipulated duty, that it is about to undertake to drain an additional quantity of land.

I shall now call Mr. Chatfield's attention to the counter for steam-boats, to register the number of revolutions of the paddle-wheels, the key to be in the commander's possession, and a weekly entry made in the log, jointly with the bushels of coal consumed. The number of revolutions and the area of paddles to be combined, and divided by the bushels of coal consumed. Perhaps this plan would give a good practical mode of comparing the work of different engines, independent of the form of the boat, or the variable effects of waves and wind. And I feel no hesitation in affirming my belief, should steam-boat engineers ever publish a statement of their respective engines, that in three years from that period three-fifths or more of the coal at present required will be saved.

An intelligent gentleman from France, an agent of the government of that country, has lately visited the mines here, to examine the engines. The alterations necessary are so obvious, that it is time for us to consider whether we mean to lead or follow our neighbours, the French, in the march of improvement.

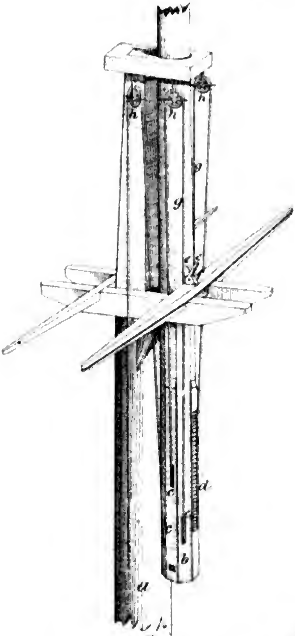
I have thus attempted to explain the mode adopted with the Cornish engines, aware of the advantages they possess in comparison with steam-boat engines, and equally convinced that the difference in the consumption of coal is far greater than is proportional to the respective circumstances under which they are worked. JOHN S. ENYS.

Truro, April 13, 1833.

III.—WEIGHTS OF SHIPS' BOATS.

THE following table, shewing the weights of the various boats supplied to his Majesty's ships, is copied from Mr. Edye's useful work, entitled "Calculations relating to the Equipment, Displacement, &c. of Ships and Vessels of War," a work which we again

PLAN OF H·M·S MALABAR'S TOPMASTS.



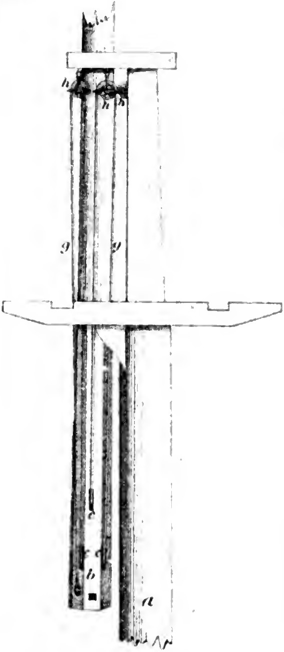


Fig. 1.

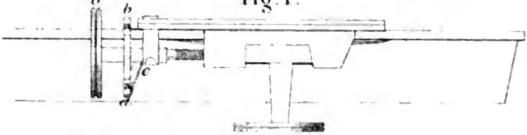
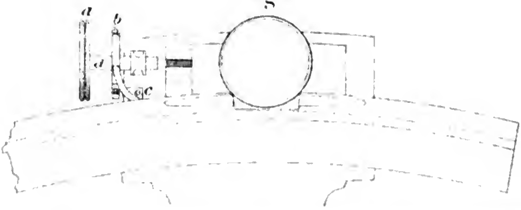


Fig. 2.



C Bradbury Lith.

Published [illegible]

recommend our nautical readers as full of important information to them :

Vessel's No. of Guns....	120.		80.		74.		Razee. 50.		52.		46.		Razee Corvet 26.		28.		Corvette. 18.		Brig. 18.		Brig. 10.		Schooner.		Cutter	
	Tons.	Cwt.	Tons.	Cwt.	Tons.	Cwt.	Tons.	Cwt.	Tons.	Cwt.	Tons.	Cwt.	Tons.	Cwt.	Tons.	Cwt.	Tons.	Cwt.	Tons.	Cwt.	Tons.	Cwt.	Tons.	Cwt.	Tons.	Cwt.
Launch	5	8	5	2	5	2	5	2	4	3½	4	3½	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Cutters, 2 in No.	1	3	1	3	1	3	1	2	1	3	1	3	1	3	0	14¾	0	10¾	0	10¾	1	3	0	16	0	16
Barge	1	10	1	10	1	10	1	10	1	10	1*	10	0	14½	1	6	0	8	0	8	......	......	......	......	......	......
Pinnace	1	10	1	10	1	10	1	10	1	5¼	1	10	1	10	1	5¼	1	5¼	1	5¼	......	......	......	......	......	......
Gig	......	......	......	......	......	......	0	10¾	......	......	......	......	0	9½	......	......	......	......	......	......	0	9	0	13	0	13¼
Jolly boat	0	9¾	0	9¾	0	9¾	0	9½	0	9¾	0	9¾	......	......	0	9¾	0	7¾	0	7¾	0	9¾	0	7¾	0	4½
Total Wt. boats	10	0¾	9	14¾	9	14¾	10	4¼	8	11½	8	16¼	3	17	3	15¾	2	11¾	2	11¾	2	1¾	1	16¾	1	13¾

* If Commodore.

We deem it but justice to Mr. Edye to record the following very flattering approbation of his labours :

> "Cornwall Terrace, 26th July, 1832.
>
> "Dear Sir—I beg to inform you I did myself the honour of presenting to his Majesty your very laborious and valuable work on Naval Calculations, and I am commanded by his Majesty to express his approbation of your object in having devoted so much time and labour to a purpose so useful to the naval service in general. His Majesty was most graciously pleased to accept it, and I beg to add my own personal approbation of it.
>
> "I am, &c. &c.
>
> "H. Blackwood, Vice-Admiral.
>
> "To J. Edye, Esq."

IV.—New Method of Fitting a Mast-rope for Topmasts, by Mr. James Pearce, Master R.N.

To the Editor of the Nautical Magazine.

Sir—You are fully aware of the enormous weight and expense of our present gear for getting topmasts up or down, and the difficulty attending this operation ; and I, having witnessed serious accidents, besides having heard of many others, turned my attention to the plan I had the pleasure of sending to you, which our wintering in the Downs gave us opportunity of proving the advantages of. I now beg to forward you the following statement respecting it.

The mast-rope for the Malabar's topmasts is 5½ inches, 6½ inches for Britannia, and 3½ inches for the Champion.

I would recommend all ships above 28 guns to have four gins fixed to the cap, the weight of which, if properly made, will not be more than 56 lbs. I would also recommend them to have iron shackles instead of hooks of 1¼ inch at most, the cap bolts of 1½ inch being quite large enough. The gins, where there are four, to be of the same thickness, according to the size of the mast-rope, but of different diameters. The after gin to be of the same diameter as the hole in the cap for the topmast. The two middle gins to be three-fourths in diameter, and the foremost gin to be one-half in diameter of the same hole.

By this arrangement the friction will be less and the mast-rope will lead more fairly to and from the sheave-holes, and be fully equal to get the mast up or down when rigged.

If required to be got on deck, all that is necessary is to land it, then to slip the standing part from off the bolt, and unreeve all but from the after-sheave in the topmast, and either to stop the parts to the mast-head, or to have two sheaves to lead them through, then lower away. By this plan, a hawser is not required, as is now the case; and besides these advantages, the economy attending it is very considerable, as the following statement will shew:—

Comparative Statement of Expenses for Fore and Main Top Masts of 1st and 2d Rates.

PRESENT PLAN.					PROPOSED PLAN.				
Species.	No.	Size.	Weight	Value.	Species.	No.	Size.	Weight	Value.
Blocks Top...	4	26	1120	£30 0 0	Gins......	8	12	472	£24 0 0
TopTackle	8	20	2176	47 4 0	Mast Ropes	2	6½	1800	45 0 0
Pendants .	4	9	1782	43 15 0					
Falls	4	4½	1232	27 10 0					£69 0 0
Thimbles .	4	3	40	1 0 0					
			£	149 9 0					
Gins and Mast Ropes......				69 0 0					
A saving in one ship......£				£80 9 0					

Expenses for Sixth Rates and under.

Blocks Top...	**2**	**16**		**£5 0 0**	**Gins......**	**6**	**7½**	**120**	**£7 10 0**
TopTackle	**4**	**14**		**8 8 0**	**Mast Ropes**	**2**	**3**	**392**	**7 17 6**
Pendants .	**2**	**6**	**224**	**4 10 0**					
Falls	**2**	**3**	**280**	**5 12 6**					
Thimbles .	**2**	**2**	**8**	**0 4 0**					
			£	**23 14 6**					
				15 7 6					
				£8 7 0					

The workmanship on the topmast would be nearly alike, for the three sheave-holes and lignum-vitæ sheaves would be rather less than the cost of the one metal sheave and the half-wood one which are now fitted.

The rack and pall, although not so necessary now as when the weight depended on one pendant, is still desirable, and the whole cost would not be more than £7 for both masts, including the palls and fitting; besides which, the ship's carpenters can do it all.

Dimensions of racks, as under.

Britannia's, Long 8 feet.
Broad 0 .. 4½ inches. } Weight of each 280 lbs.
Deep 0 .. 3 ....
Teeth 0 .. 4 .... apart, 4 inches broad, 2 inches deep —the half-inch rack is sunk that much into the foreside of the topmast, which perfectly secures it. The palls stand on the riding cross-trees, the one 18 in. the other 12 in., catching at every 2 inches, and made of wrought-irom or else metal.

Champion's, Long 6 feet 0 inches.
Broad 0 .. 2½ .... } Weight of each 78 lbs. palls of the length above.
Deep 0 .. 2 ....
Teeth 0 .. 4 .... apart, 2 in. broad, and 1½ in. deep.

Having stated the size of the largest and smallest ships, any arrangement for intermediate sizes can be easily made. I beg you will excuse this hasty communication, as the Malabar is preparing for sea.

JAMES PEARCE, Master, R.N.

V.—APPLICATION OF A MICROMETER-HEAD TO THE TANGENT-SCREW OF THE SEXTANT, BY LIEUT. O. STANLEY, R.N.

THE figures 1 and 2 in the plate represent the index and part of the arc of a sextant. On the tangent-screw a circular head, b, is fitted, the circumference of which is divided into four equal parts by the notches aaa; a spring, d, is also attached to the index, the point, d, of which presses gently against the circumference of b, and by falling into the notches aa marks each quarter-revolution of the tangent-screw.

An observer, without reading off after every observation, will thus be able to move the index over a certain portion of the arc corresponding to a quarter-revolution of the tangent-screw, by feeling the point of the spring catch in the notches. And since these portions are all equal, if the first and last altitudes of a set are read off, the *times* only of the intermediate observations being noted down, it is evident that the mean of the two altitudes will give the mean altitude corresponding to the mean of all the times. For example, suppose the first altitude observed was 22° 10′ 30″, the last 22° 22′ 30″, and that each quarter-revolution of the tangent-screw moved the index over 3 minutes, the observations would be noted down as follows:

	Times.				*Altitudes.*		
	h.	m.	sec.		°	′	″
	9	10	45		22	10	30
		11	5				
		11	25				
		11	45				
		12	05		22	22	30
5)		7	05	2)		33	00
Means.	9	11	25		22	16	30

In taking equal altitudes, by leaving the index clamped at the last forenoon observation, the screw may be turned *back* through the same threads in the afternoon, which would correct any inequality there might be in the threads.

When using the sextant on a stand on shore, much time and trouble is saved by not having to turn the face up after every observation, to read off. In taking sights at night, much time may also be saved.

It may be objected, that the threads of the tangent-screw are not equidistant, and that consequently the portions of the arc moved over are unequal; but, as in large instruments the minute readings-off are performed by the threads of a fine screw, very little difficulty can exist in making the threads of the tangent-screw equal. If they are not so, a few readings-off will point it out.

VI.—*Excursion up the* COMPOONEE RIVER, *lately discovered on the Coast of Africa, by H.M.S. Ætna.*

AN examination of this new river being determined on, preparations were made for a boat expedition, to penetrate as far up as it was navigable. The ship was left at anchor about twenty miles outside of Sand Island, at the entrance the shore being low and flat. A train of peculiar but not unpleasing sensations rush on the mind, when for the first time we visit a region which has till then remained unknown to all but a few wild Indians. It was some time after we left the ship, before we saw any thing of the land we were approaching. Small detached clusters of trees first appeared above the horizon, and as we drew nearer they seemed to expand, and at length rapidly united into one continuous line. This is the usual manner in which mangrove trees first present themselves to the spectator. The evening had set in as soon as we found ourselves off the mouth of the river; and by the time we had entered, it was dark. As nothing could be done without daylight, the ship's tender, which had accompanied us, was anchored in the middle of the river, and we passed the night on board of her.

On the following morning we were close to Pelican Island, so named in consequence of the numerous pelicans which frequent it, although it is equally the resort of cranes, curlews, and several other species of birds. It is about twelve miles from the mouth of the river. The weather was remarkably fine. The tranquil surface of the water, undisturbed in its sleepy current, glittered beneath the rays of the rising sun. The air was cool and refreshing; all was still around, as we continued our course up the river.

As we passed Pelican Island, scrutinizing the banks with our glasses, we discovered some natives by the water side. They appeared to have just left a canoe, and were carrying off their paddles, but, on perceiving us, they suddenly stopped, and seemed quite at a loss how to proceed. They stood gazing at us, and retreating before us alternately, refusing to wait our approach, and at length disappeared in the wood, where we had observed some rising smoke. Anxious to make our way up the river, we passed on, and saw no more of them.

By noon we had proceeded up the river about forty miles, when our further progress in the vessel was arrested by a rocky barrier, on which the water was too shoal for her to pass. We immediately cast anchor, and prepared to continue up the river in boats. Appearances, however, were against our proceeding far, but after we had passed a reach or two, the breadth of the river, which had become contracted, increased considerably, and we enjoyed the prospect of an extensive sheet of water before us for several miles, and sufficiently deep for tolerably large vessels. The banks also gradually became more uneven and elevated; the constant sameness of the low mangrove bushes was changed into vast and magnificent forests; and the few small patches of cultivated ground, which were occasionally seen between the natural avenues of the trees, had all the appearance of great fertility. Frequently we observed natives, who wore nothing else than a covering round their loins, gazing at us from the banks of the river; as fast as we approached, they retired into the woods. On the following day, towards sunset, when we imagined ourselves about eighty miles from the mouth of the river, we arrived at a part where the banks were entirely cleared on both sides, and soon afterwards discovered a few huts on a rising ground near the water side. Several natives, who appeared to be decently dressed in clothes made of the country cotton, were loitering about with old muskets in their hands. They also wore hats; an article of dress which at once stamped them, in our minds, as being superior to the others that we had seen. As we approached the settlement for the purpose of landing, they betrayed much consternation, evidently hesitating on what they should do, whether to retreat, or to wait and receive us. By our signs they determined on the latter, and we quickly reached the shore, when they gradually lost their fears, and we soon became capital friends. Indeed, it was rather amusing to observe how quickly their diffidence and doubts were replaced by an entire confidence in us, as soon as they perceived that our intentions were not hostile. One of the fellows spoke a little English, and, being a loquacious and busy sort of a gentleman, we obtained a good deal of information from him. He told us that the name of the river is Compoonee, and that our boats would not be able to go much higher up, as we were near the source. We had anticipated this from the decreasing width which we had observed in the course of the day, for opposite the settlement it is not above a stone's throw across. We were further informed, that the king, whose name is Ducleen, resided a little further up the river; and our new friends with one accord volunteered their services, to show us his residence. Our wants did not consist in requiring such information, only we were anxious to add some fresh stock to our salt provisions, and accordingly moved on to the huts. These were rudely formed, being circular, with conical roofs; and the few articles of furniture they contained, served not to exalt their inmates in our estimation.

In the shape of stock, a few fowls and some sweet cassada roots were all we could obtain; indeed, the natives had nothing else to offer us, and seemed to be miserably poor. We could attribute this to nothing else than their idle habits, for the face of the whole country, and the nature of the soil, seemed to promise an appearance of plenty. The wild guinea-fowl flew harmlessly in great numbers over our heads, but we could see none domesticated, although they are so plentiful in other parts of Africa. We observed great quantities of the Chili pepper, and on the bank of the river we found a dried fruit about the size of a pear, and a brown plum was seen in abundance. This dried fruit is highly esteemed at Goree, where it is called datach. In our communication with these people, we observed neither women nor children; and it is not improbable, that, still distrustful of us, they had secreted them with the best of their goods; at all events, seeing that we could get nothing more from them, we left them and entered our boats.

Continuing our course up the river, we soon found our further progress arrested by its being too shallow for our boats, and we therefore anchored a short time previous to returning. Our object for ascending the river, besides that of discovering its course, was to ascertain whether it was connected with the Rio Grande; and it was provoking to be thus disappointed, for, in addition to the gratification which we had felt in knowing that every inch of what we saw was new ground, we were all impressed with the belief, and therefore the hope, that we should make the grand discovery of the Compoonee being connected with the Rio Grande. Such, however, was not the case; and the excitement of adding a grand desideratum to our discoveries, subsided in the thoughts of returning. The evening was particularly fine, as we lay at anchor in our boats in this sequestered part of the river; and the banks on each side appeared beautiful and highly interesting, from the contrast between them and the constant same and unvaried appearance of the low marshy mangrove banks so prevalent near the coast. According to our calculations, we were about eighty miles from the entrance of the river; and certainly no where did nature ever reign in more profound and undisturbed repose than here. All was silence and stillness; the feathered inhabitants of the place, cranes, herons, flamingoes, fish-eagles, parrots, pigeons, ducks, kingfishers, toucans, hawks, pheasants, doves, all seemed to revel in their lawful abodes, and exult in their security.

On our way up the river we had seen several hippopotami, but not before we had passed the limits of brackish water. They proved very shy, and would not allow us to approach them within gun-shot. We chased one of them into the woods without success, as our time did not allow us to pursue him further. In the course of the night, as we lay at anchor, we distinctly heard the noises of large animals, on each bank, snapping off the dried branches of the trees, and rustling among the brushwood. These we concluded to be hippopotami, or elephants; but we were more inclined to believe they were the former, having seen none of the latter.

On the following day, we commenced our return down the river, the weather continuing fine as before. We suffered a good deal, however, in the night, from the effect of the cold, although the thermometer did not fall below 72°. The heat in the course of the day was very oppressive, the thermometer being about 84°. These may appear to be moderate extremes; but we felt the effects of the heat more from the want of a good breeze during the day, and probably the cold at night from the effects of the dew. In our way down the river, we fired off a little chamber, for the purpose of measuring distance by sound, when, a few minutes afterwards, we discovered a fire near us, as we lay at anchor, and in a place where we had no idea of seeing natives. The population of the banks of the river, therefore, may be more numerous than we had supposed; for we now and then heard the sound of the tom-tom, or drum, and the voices of people concealed among the trees, when there were no other indications of inhabitants.

The people we had seen were of moderate stature, and of a similar complexion to those on the coast; their features coarse, while they evinced mildness; their hair short and curly. Their manners were perfectly simple, and we were much struck with one in particular, who wore an apron of palm-leaves, certainly the most primitive dress of the human race.

We passed another night at anchor in the river, in the vicinity of a pack of jackals. The bark, or protracted howl, of these animals was repeated at intervals till about midnight, and again commenced towards daybreak. The sensation produced by the noise of these animals, in the solemn stillness of night, when every thing around is buried in deep repose, is any thing but pleasing; and we could not help feeling an inward satisfaction that we were out of their reach. They appeared to be close to the bank, and the bark, or howl, was commenced at one end of their line, and passed on to the other, a distance of about half a mile. Although the transition is not so sudden, it reminded us of the echo from the report of a gun, or the passage of the electric fluid through a long range of clouds. At daylight this horrid noise, which had annoyed us not a little, entirely ceased.

The Compoonee is very serpentine in its course, and is navigable for schooners as far nearly as we went up in the boats. The latitude of the entrance is 10° 50′ N, and long. 14° 50′ W. We passed numerous small tributary branches on each side, which we did not think it worth while to examine; and the rise of the tide near the mouth appeared to be from six to ten feet.

VII.—The Method *adopted at the Royal Observatory at Greenwich for* DETERMINING THE RATES *of the* CHRONOMETERS *there in competition for the Annual Premiums.*

It must be premised, that the rates of the chronometers are found by comparing them with a standard mean solar clock, the error of which is carefully found by astronomical observations. The following method was first introduced at the Observatory in the year 1824, and has been constantly used since that period.

As the method of comparing one time-piece with another (the error of the latter being known) is so simple a process, it might be thought unnecessary to offer any remarks thereon. When, however, a great number of watches are to be compared *daily*, as is the case at the Royal Observatory, simplicity and expedition are absolutely requisite; and we give the method employed at Greenwich, as it may save some thought and trouble at any other place where the circumstances are similar.

The peculiarity of this method consists in neglecting the hours and minutes of both clock and chronometer; and that this may be done, will appear from the following demonstration :

The second and tenth are always taken from the clock when the chronometer is *at the whole minute,* and these, are alone noted : Let x be the disregarded hours and minutes of the chronometer, y those of the clock, and a the second and tenths noted. Then if e be the known correction of the clock error, as obtained from comparisons with the transit clock, and ϵ the unknown correction of the chronometer, we have :

$x+\epsilon=y+a+e$. (1.) Each side of the equation expressing the moment of comparison in mean solar time.

Next day, and as nearly at the same time as may be, the comparison is again made ; and if the quantities known and unknown be expressed by the same letters, as above, *accented,* we have :

$$x'+\epsilon'=y'+a'+e'. \text{ (2.)}$$

Subtracting (1) from (2) we further have :

$$x'-x+\epsilon'-\epsilon=y'-y+(a'+e')-(a+e).$$

Now, as $\epsilon-\epsilon'$; and $(a'+'e)-(a+e)$ are each in practice a small number of seconds, we must have $x'-x=y'-y$, since, from the conditions observed, each of the latter numbers must be a *whole number of hours and minutes.* Hence $\epsilon'-\epsilon=(a'+e')-(a+e)$ where $\epsilon'-\epsilon$ is the daily rate required, but with a changed sign, and the Greenwich method follows this formula. If the rate of either timekeeper were *very wide,* or if the comparisons were made at long intervals, some ambiguity might arise from neglecting the minutes ; the rate, too, would require a proportionate alteration, if the intervals of comparison sensibly differed from 24 hours ; but these exceptions never occur in practice at the Royal Observatory.

The equation given above may perhaps appear somewhat more simple, if arranged thus : $\epsilon'-\epsilon=(a'-a)+(e'-e)$; change the signs, then we have $\epsilon-\epsilon'=(e-e')+(a-a')$, which, when stated in words at length, gives the following rule :

$$\begin{array}{c}\text{The rate of the chronometer}\\ \text{from one day to another.}\end{array} = \left\{\begin{array}{l}\text{the rate of the clock } + \text{ the seconds, \&c. of the}\\ \quad\text{first day's comparison, } - \text{ the seconds, \&c.,}\\ \quad\text{of the last day's comparison.}\end{array}\right.$$

VIII.—THE PASSAGE ACROSS THE NORTH ATLANTIC OCEAN.

ALTHOUGH the voyage to and from North America, between the parallels of 60 and 40, has always been attended with a degree of peril, from masses of ice which drift to the southward during the summer months from the polar regions, yet many an unwary mariner makes his run across the Atlantic without any apprehension of meeting these floating dangers, or without sufficiently exercising a proper discretion and vigilance to guard against coming in collision with them. This is not mere conjecture, but the information of persons who annually perform the voyage, besides the result of my own observation in accidents which have repeatedly occurred to vessels between Newfoundland and England,

and in the number of missing ships on this route. Commanders of ships should therefore bear in mind the imperative necessity there is for using their utmost vigilance and attention when crossing the above-named parallels, especially between the meridians of 30 and 60 west, to guard against coming in contact with these formidable dangers of the ocean.

The New York packet ships, well supplied with every essential equipment, and elegantly fitted for the accommodation of passengers, when making their winter voyage from Liverpool, keep in high latitudes until nearing Newfoundland. This they do for the two-fold object of avoiding the tempestuous weather so generally experienced to the southward, and of obtaining fairer winds; and thus, by slipping within the mighty stream from the Florida Channel, they evade its retarding influence. The voyage by this route is shortened, and, although bad weather must be expected, it is not so violent as farther south, besides which the easterly current is avoided. I believe it is an unusual thing to meet with ice in this part of the Atlantic in the winter; but we have the following recent instance of the contrary, so that a look-out should be kept in that season, as well as in the summer, by vessels making the voyage.

It appears that the Emulous packet, on the 26th February last, met with much *field-ice* on the coast of Nova Scotia; and in the lat. of 43° N. and long. 49° W. they were much surprised on board to fall in with a large quantity of strongly *packed-ice*, which reduced the vessel's way to 6½ and 7 knots, from sailing at the rate of 9 knots, under close-reefed main topsail and reefed foresail. On the 4th of March, she fell in with three bergs, of large dimensions, in a run of 95 miles; and at nine the same evening she was obliged to pass between the two easternmost of these, before heaving-to for the night; after which, by keeping a more northerly course, no more of these dangerous floating masses were seen.

From all accounts, it seems that the greatest danger is to be apprehended in the vicinity of the Banks of Newfoundland; and this, as every navigator knows, is increased by a dense fog which generally pervades the atmosphere in that quarter, and, of course, shortens the distance of vision to a very circumscribed limit.

Vessels bound to Halifax have the additional risk of stumbling upon that gigantic sand-bank, Sable Island. Several vessels have thereon terminated their voyages. The establishment which has been formed there for the relief of ship-wrecked mariners is creditable to the humanity of the Colonial Assembly of Nova Scotia; but such can only mitigate, not prevent, the evil. That the mother-country does not cause a light-house to be erected on some convenient point of the island, is not only surprising, but greatly to be regretted. Why not make a second Ascension of it? Surely, in a circuit of thirty miles, some sort of productive soil might be found, besides sand; at least, where the juniper, blueberry, vetch, and grass thrive, it might be possible to grow culinary vegetables, and to rear stock. It has fresh-water ponds, and the Sand-hills are elevated 140 feet above the level of the sea. The establishment of a light-house on Sable Island is well worthy the consideration of our Colonial Government. ATLANTICA.

IX.—LIST OF VESSELS OF THE ROYAL NAVY WRECKED SINCE THE 1ST OF JANUARY, 1816.

ALCESTE, 46 guns, 1101 tons.—Wrecked on Pulo Leat, in the Strait of Gaspar, in Feb. 1817. The crew all saved. She was a French-built vessel, and was captured by Sir Samuel Hood off Rochfort on the 25th Sept. 1806.

THETIS, 46 guns, 1087 tons.—Was wrecked on Cape Frio in Dec. 1830, on her passage to England, with a large quantity of treasure on board. Crew all saved, excepting 20. Built at Pembroke in 1817.

DIAMOND, 46 gums, 1083 tons.—Accidentally destroyed by fire while in ordinary in Portsmouth harbour, 18th Feb. 1827.

CAMBRIAN, 48 guns, 1150 tons.—Built at Chatham in 1797. Run foul of while in stays by H.M.S. Isis, by which she drifted on the Island of Carabousa, and was wrecked in Jan. 1828. Crew saved.

PHŒNIX, 42 guns, 884 tons.—Built at Bursledon in 1783. Wrecked near Smyrna in Feb. 1816. Crew saved.

COMUS, 32 guns, 522 tons.—Wrecked on the Coast of Newfoundland in Oct. 1816. Crew saved.

CARRON, 20 guns, 456 tons.—Built in 1813. Wrecked on the Coast of Coromandel 6th July, 1820. The master and 20 of crew drowned.

TAY, 20 guns, 460 tons.—Built at Plymouth in 1814. Wrecked on the Alacranes in the Gulf of Mexico in November, 1816. Crew saved.

ERNE, 20 guns, 457 tons.—Built in 1813. Wrecked on the Island of Sal, Cape de Verds, in June 1819. Crew saved.

MARTIN, 16 guns.—Wrecked on the West Coast of Ireland in December, 1817.

MARTIN, 20 guns, 460 tons.—Built at Portsmouth in 1820. Supposed to have foundered off the Cape in 1826.

NIMROD, 18 guns, 387 tons.—Built in 1812. Got on shore in Holy Head bay in January, 1827. She was sold there afterwards in March, was repaired, and lengthened, and became the Nimrod of Liverpool, of 470 tons.

ACORN, 18 guns, 455 tons.—Built at Chatham in 1826. She left Bermuda for Halifax, in company with H.M.S. Hussar, Vice-Admiral Sir Charles Ogle, Bart., and H.M.S. Tyne, Capt. K. White. On the 15th of April the three vessels parted company in a gale. The Hussar and Tyne arrived at Halifax, but the ill-fated Acorn has never since been heard of.

RACEHORSE, 18 guns, and 386 tons.—Built in 1805. Wrecked in Douglas bay, Isle of Man, in December, 1822.

CONFIANCE, 18 guns, and 385 tons.—Built in 1813. Wrecked during a gale in March, 1822, off Mizen Head, on the coast of Ireland. All lost, excepting five, who were not on board.

ARAB, 18 guns, 387 tons.—Built in 1812. Foundered off the coast of Ireland in December, 1823.

Columbine, 18, 386 tons.—Built in 1806. She was wrecked on the Island of Sapienza, in the Mediterranean, in January, 1824.

Julia, 16 guns, 284 tons.—Built in 1806. Wrecked on the Island of Tristan d'Acunha in October, 1817.

Whiting schooner, 14 guns, 225 tons.—An American vessel captured in 1812. Lost in Padstow bay in Sept. 1816.

Ranger, Revenue Cutter, 14 guns, 190 tons.—Foundered near Yarmouth (east coast) in a gale in October, 1822. Crew drowned, excepting five not on board.

Telegraph, Schooner, 12 guns, 180 tons.—Wrecked in Plymouth Sound in January, 1817. One seaman only saved.

Hardwicke, Revenue Cutter, 12 guns, and 127 tons.—Wrecked in Dundrum bay, coast of Ireland, in October, 1820.

Contest, 12 guns, 455 tons.—Built at Chatham in 1826. She left Bermuda in April, 1828, with £10,000 on board. Supposed to have foundered in a gale, as she has not been heard of since.

Dominica, Schooner, 10 guns, 203 tons.—Lost near Bermuda in Aug. 1815.

Briseis, 10 guns, 237 tons.—Built in 1808. Lost on Point Pedras, Cuba, in November, 1816.

Bermuda, 10 guns, 237 tons.—Built in 1808. Lost near Tampico in November, 1816.

Jasper, 10 guns, 237 tons.—Built in 1808. Lost in Plymouth Sound in Jan. 1817. The commander and two seamen only saved.

Drake, 10 guns, 235 tons.—Built at Ipswich in 1808. Lost in Trepassey Bay, Newfoundland, 11th June, 1822, during a fog. Mails from Halifax to St. John's lost. 4 officers and 16 seamen drowned.

Delight, 10 guns, 235 tons.—Built at Portsmouth in 1819. Supposed to have foundered in a hurricane off the Mauritius in Feb. 1824.

Dwarf, Cutter, 10 guns, 190 tons.—Built at Woolwich, 1810. Lost in Dublin Bay in March, 1824.

Partridge, 10 guns, 190 tons.—Built at Plymouth in 1822. Lost on Vlie Island in November, 1824. She was tender to H.M.S. Britannia, and was blown out of Leith roads.

Algerine, 10 guns, 235 tons.—Built at Deptford in 1824. Foundered in the Mediterranean in March, 1826.

Hearty, Packet, 10 guns, 235 tons.—Built at Chatham in 1824. Sailed in June, 1827. Not heard of since.

Parthian, 10 guns, 235 tons.—Built in 1808. Lost off the coast of Egypt in 1828.

Redpole, 10 guns, 237 tons, Packet.—Built at Bombay in 1810. Left Rio Janeiro on the 21st August, 1828, for England, with the mail. Not heard of since. Supposed to have been captured by a pirate, and the crew murdered.

Jasper, 10 guns, 235 tons.—Built at Portsmouth in 1820. Lost off Santa-Maura on 13th October, 1828.

Redwing, 10 guns.—Lost on the coast of Africa in 1827. Supposed to have foundered.

Recruit, 10 guns, Packet.—Lost on her passage from Halifax to England in 1832. Supposed to have foundered.

Nightingale, Schooner, 8 guns, 175 tons.—Built at Plymouth in 1825. Lost on the Shingles in Feb. 1829, on her passage from Plymouth to Portsmouth.

Ariel, Packet, 6 guns, 235 tons.—Built at Deptford in 1820. Left Falmouth 10th Nov. 1828, with mails for Bermuda and Halifax Not heard of since.

Myrtle, *Packet*, 6 guns, 235 tons.—Built at Portsmouth in 1825. Lost at sea in April, 1829, on her passage from Bermuda to Halifax.

Sprightly, *Rev. Cut.*, 6 guns, 82 tons.—Lost off Portland in Jan. 1821.

Cynthia, *Packet*, 6 guns, 233 tons.—Lost 5th June, 1827. Built by Mr. Symonds of Falmouth.

Magpie, *Schooner*, 5 guns, 76 tons.—Built at Jamaica in 1826. Lost off Cuba in August, 1826. Capsized in a squall. Two of crew saved, of 26.

Union, *Schooner*, 4 guns, 92 tons.—Lost on Rose Island, New Providence, in March, 1828.

Fury, 4 guns, 378 tons.—Driven on shore by the ice in Prince Regent's Inlet, Aug. 1825.

Kangaroo, *Surveying-vessel*, 211 tons.—Lost on the Hogsties in the West Indies in Dec. 1828.

Monkey, *Schooner*, 3 guns, 76 tons.—Built at Jamaica in 1826. Lost on Tampico bar in May, 1831. Crew saved.

Misletoe, *Tender*.—Lost off Brighton in January, 1817.

Porcupine, *Schooner*—Lost on the Bahamas in 1817.

Shark—Lost in Port Royal Harbour in January, 1817.

Speedwell, *Rev. Cut.*—Lost near Fraserburgh in February, 1819.

Vigilant, *Rev. Cut.*—Lost in Torbay, December, 1819.

X.—THE SCREW FID.[*]

Mr. Pearce, whose plan for converting a foresail into a topsail appeared in a former number,[†] has forwarded us a description of his screw fid, for which he has a patent, and we lay it before our readers, as it may not be known to some.

Fig. 1.

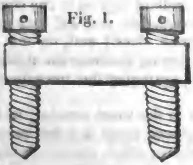


Fig. 2.

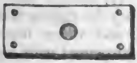
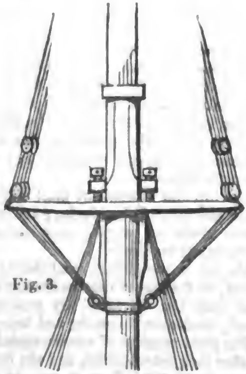


Fig. 3.



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[*] H.M.S. Thunder, Capt. R. Owen, is being fitted at Chatham with this fid. We hope to see it as general in the Royal Navy as it already is in the Merchant service, and are convinced that it only requires care to become a favourite.

[†] No. 11 Nautical Magazine.

Explanation of the Drawings.

Fig. 1.—The fid and screws.

Fig. 2.—A plate, which is nailed on each tresseltree, with a steel socket in the centre for the screws to work in.

Fig. 3.—Part of a lowermast, with a topmast on end, and the fid in its place. The screw fid is fitted in the upper part of the common fid hole, and is entered, as is shewn in the figure, before any strain comes on the rigging, relieving the strain on the mast rope, which is so often required in fidding masts.

To Strike a Topmast.

Reeve a top rope as usual; heave it taught; heave back the screws, a turn or two of which leaves the strain on the mast rope; take out one screw, draw out the fid, and lower away. Previous to striking the masts, have the backstays stopped in the after part of the top, which not only keeps them in their place, but allows the mast to be hove up with more ease.

N.B.—The common fid can be taken out, and the patent fid fitted, when all the masts are up, without disturbing the rigging, or using a mast rope.

There are many advantages which, to a certain extent, this fid possesses over any that we have yet seen; but it may be observed, that when it is required for a large ship's topmast, the increased weight of it may become an objection. For our own parts, we are not without our doubts of the validity of this objection, if the due proportion be observed; and we may add, that it is very extensively used, and approved of, by our mercantile navy. The advantages of it may be enumerated in Mr. Pearce's words, and will be at once evident to seamen.

"This invention recommends itself in the strongest manner to the patronage of ship-owners, by the power which it possesses, *and which is quite peculiar to itself*, of adjusting the tension of the top and top-gallant rigging to any climate, without taking in sail, by the simplest process imaginable, and will thus secure the mast in dry weather, when the rigging becomes slack; and, on the contrary, ease the strain in wet weather when the rigging becomes too tight; by this means preventing the crippling of the masts, springing the tresseltrees, or injuring the ropes.

"The top and top-gallant mast may be struck in the worst weather, without slacking any part of the rigging, and may be replaced again in a few minutes, however much the rigging may shrink from wet or other causes during the time the masts are down.

"If a top or top-gallant mast should be carried away, another may soon be replaced, as the loss of time in casting off and setting up the rigging is avoided. Ballast may also be saved by striking the masts; and where this plan is adopted, dead-eyes, lanyards, and top-plates may be dispensed with.

"The great number of vessels already fitted up with these fids in so short a time after their introduction, and the flattering reports received from those who have practically tried them at sea, as well as the decided approbation which they have received from a number of eminent officers in the navy, and the East India and merchant service, warrant the patentees in offering them with confidence to ship-owners and masters of vessels.

"The fids may be seen at the office of the patentees, No. 7, Hurst-street, Liverpool; and at the following places:—

"Mr. William Young, No. 268, Wapping, near the Docks, London; Mr. D. Bissett, Inspector for Lloyd's, Leith; Mr. Thomas Flint, Ship Chandler, &c., White-Frier-Gate, Hull; Messrs. Terry, Hill, and Co., Scarborough; Mr. Henry Dauthwaite, Stockton-upon-Tees; Messrs. Wood and Parker, Sunderland; Mr. A. M'Leod, Gateshead, Durham, for Newcastle and Shields; Messrs. Thompson and Just, Ship-Brokers, Dundee; Mr. Alexander, Workington; Messrs. J. and A. M'Gowan, Whitehaven; and Mr. Samuel Rodgers, Blockmaker, Greenock."

We do but justice to Mr. Pearce in selecting the following letter, from among the numerous recommendations which he has received:

"*Brig Wilson, Jan.* 1, 1832.

"Sir—I am now better enabled to give you my opinion of the utility of the Patent Screw Fids, having used them in two different vessels; the advantages to be derived from their use are great, in unfidding the topmasts, which I have frequently to do, so as to discharge all the cargo previous to taking in any ballast or other cargo; this can be done in a few minutes, and refidded with equal ease and speed, without casting loose any standing rigging. They are very serviceable in setting up topmast and topgallant rigging, when new, or in coming into warm weather when casting loose lanyards is attended with much risk and trouble. Vessels trading to ports having open roadsteads must derive a still greater benefit from them, enabling them to strike their topmasts and topgallant masts, and fid them again with ease, and so much quicker than with the common fid; this advantage is frequently seen in housing topgallant masts at sea, blowing hard, and ships labouring heavy. The security and durability of them is much in their favour; they are easily kept in good order, with caps over them, and oiled a little. I shall always feel a pleasure in recommending their use, as I am assured they are a valuable improvement.

I remain, Sir, your obedient servant,
P. INGLIS, jun.

XI.—METHOD OF CONNECTING THE STEM, KEELS, DEADWOOD, ETC., ADOPTED IN H.M.S. VERNON, BY MR. OLIVER LANG, OF WOOLWICH DOCKYARD.

References.

A—The broken line shews the scarph of the keel with dowels; in the forepart of the ship it shews the connexion of the stem and keel, instead of boxing, as is usually done.

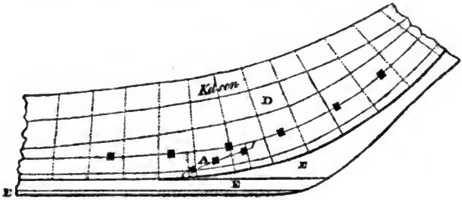
B—The dotted part shews the tenon and groove, at the scarph of the keel, and the lower end of the post forming a stop for the caulking.

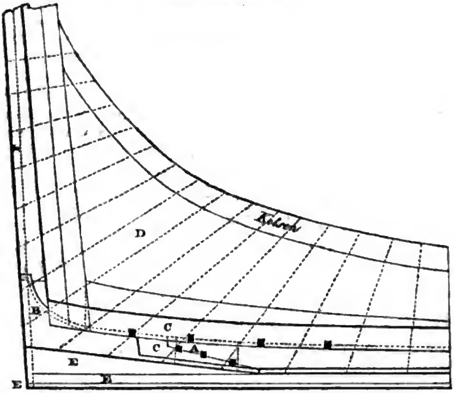
C—After-ends of thick strakes, forming the garboard, which are bolted across the inner keel.

D—Deadwood, the lower piece dowelled to the keel and the after-end grooved, and tenoned into the heel of the inner post, as shewn by the dotted lines.

E—The outer keels, and gripe, which may be carried away without injury to the fabric of the ship.

F—The dotted line at the back of the post shews the hollow taken out to receive the front of the rudder, which is round, forming a rule joint, without any bearding.





By this mode of fitting, the outer keels may be dislodged by the rocks, and the plank of the bottom rubbed off as high up, or higher, than it is possible for the ship's bottom to come in contact with the shore by grounding, and the vessel will still be perfectly safe and water-tight.

XII.—A NARRATIVE OF FOUR VOYAGES *to the South Sea, North and South Pacific Ocean, Chinese Sea, Ethiopic and Southern Atlantic Ocean, Indian and Antarctic Ocean, from the year* 1822 *to* 1831; *comprising Critical Surveys of Coasts and Islands, with Sailing Directions; and an Account of some new and valuable Discoveries, including the Massacre Islands, where thirteen of the Author's Crew were massacred, and eaten by Cannibals. To which is prefixed a Brief Sketch of the Author's early Life. By* CAPTAIN BENJAMIN MORRELL, jun.

IT is not often that a work like the present comes before us from our friends in the western world, and we are therefore bound to make the most of it. But if this were not our duty, we have all the inclination to do so with the Voyages of Captain Morrell, for he gives us abundant proof of his being a close observer of facts, and a shrewd intelligent seaman, evidently fond of collecting information of the places which he visits, and of recording it for the benefit of those who follow him. He moreover gives us the advantage of his experience in several very interesting parts of his work, which we prognosticate will be a favourite one among his countrymen. Indeed, we must confess that it is likely to be so with ourselves, for, although we perceive in it here and there a sprinkling of the marvellous, yet there is so much interesting detail mixed up with downright good information, that we are content to take him as he is, notwithstanding he may hereafter be held up as the American Robinson Crusoe.

Captain Morrell relates his story in a plain and straightforward manner, with all the earnestness and simplicity of a seaman; a character which, if we may be allowed to judge from his work, he fully personates. And, although an American one, we are inclined to believe him half English, from his respect for us, which he carried so far as never to allow his national air to be played on board his vessel, without being followed by "Rule Britannia!" But we have so much in the work before us to turn to account, that we must be sparing of our remarks, and we will proceed at once to give our readers an insight to this American officer's production.

The author sets out in the true homely style of giving the reader an introductory sketch of his own life, which appears to be full of adventure and interest. From this we learn, that he escaped from his parents' roof, like some other youths before him, and succeeded in reaching Cadiz in an American flour-ship, in which he served before the mast, and arrived there in the midst of a bombardment by the French in 1812. Here, as might be expected, he was delighted at seeing the bomb-shells flying over his ship, and falling into the market-place, which he had to visit, and he expresses in *warm* terms his satisfaction at meeting this new sort of acquaintance, so preferable to the common routine of ship-building, which he used to witness daily in his father's dockyard at Stonington. Having effected the object of the voyage to Cadiz, and made an advantageous sale of her cargo, the ship departed on her return for New York; but her voyage was not so prosperous homewards as it had been outwards, which will be seen by the following extract:

"We continued our passage with variable winds and occasional foul weather, until we arrived on the Banks of Newfoundland, where we fell in with the British sloop-of-war Hazard, the commander of which politely furnished our captain with the news of the war, and then extended his courtesy so far as to take charge of our ship, and give the officers and crew a free passage to St. John's, Newfoundland, where we were all confined on board a prison-ship lying at the head of the harbour.

"On board of this hulk we were detained as prisoners of war about eight months, during which time we received every indulgence and liberty that could reasonably be expected by persons in our situation. For this liberal and humane treatment we were indebted to the kindness of Sir John Thomas Duckworth, commander-in-chief of his Britannic Majesty's forces on that station. He even permitted twenty-five of the American prisoners to go on shore every day, to work as riggers, receiving the customary wages for that business. He also allowed a market to be held on board the hulk, to which the countrymen were compelled to bring the best of every thing, at the same prices as were paid by citizens. Every article of provisions brought to this market, which was found to be of bad quality, was promptly thrown overboard by one of Sir John's officers.

"But, notwithstanding the kind treatment we received, we all sighed for liberty, longing to get home, that we might embrace our friends, and join our brave countrymen in arms. We therefore resolved to petition Sir John, at his next humane weekly visit, to send the American prisoners home to their families and friends. We did so, and the admiral replied in substance as follows:

"'My brave men, I feel for you, and will do all that lies in my power towards gratifying your wishes in the course of this winter. It is natural that you should desire to be restored to your friends, families, and country. You may rely upon my best exertions in your behalf.'

"Reanimated by this cordial assurance, we now felt like different beings, confident that the humane veteran spoke in the sincerity of his heart; and a few days furnished testimony that our confidence had not been misplaced. On his next visit he gave us the joyful intelligence, that arrangements had been made for our return to the States in about a month.

"No incident occurred to damp our hopes. At the time appointed we all embarked on board a cartel, and on the following day took our final leave of Sir John, with sentiments of affection and respect. It is no small gratification to my feelings at the present moment, that I am favoured with an opportunity of thus bearing public testimony to the professional merits of this gentleman, as well as to the amiable qualities of his heart. He dropped a manly tear at our parting, and his cordial 'God bless you, my lads!' was sensibly felt by every heart among us. After interchanging an affectionate farewell with other kind friends and acquaintances, we set sail for our native land, and in a few days arrived in safety at Boston."

From Boston Mr. Morrell shortly found his way to Stonington on foot, without a cent in his pocket, and trusting "to chance and to charity," as he says, for food and lodging on the road. But we must not slight him in his early misfortunes, and can fully enter into the feelings of the truant son on his way to his father's roof, after he had made up his mind to return to it.

> "'One of my comrades only accompanied me,' he says; and, though his pockets were light as my own, yet 'misery loves company,' and our conversation tended to beguile the tediousness of the way. So we journeyed on together, being sometimes received and entertained with warm hospitality and kindness, at other times treated with churlish indifference, or repulsed with unfeeling rudeness."

But every thing was arranged, on his arrival at Stonington, the fatted calf was killed, and all were made merry.

The times, however, were such as called the sons of America into activity, and Mr. Morrell, having had a taste of his future element, seriously turned his thoughts towards vying with those of his countrymen who, unhappily for our naval fame, were reading some severe lessons to us at that period. He catches very justly at the contempt in which the American "cockboats, with a piece of striped bunting at their mastheads," were held by us, and alludes to the successes of the various actions which their single ships had over ours of inferior force. With all the natural desire to take a part in them, forth he sallied, therefore, in a schooner privateer of 14 guns and 160 tons, in the capacity of quartermaster, but returned after an unsuccessful cruise. Again he sailed, in company with the privateer General Armstrong, and shortly after fell in with one of our convoys. His captain had a mind to make love to one of the vessels, which proved to be no other than the bull-dog of the fleet, one of our gun-brigs, taken for a merchantmen—a *ruse* which was often played on these occasions. However, the American skipper found out his mistake in time, and to chase him was useless! It was not long before he was caught in earnest, for, being not very far from the Cordouan light-house, at sunset one evening an English frigate was discovered to windward, coming down to him under all sail, low and aloft. The result is related as follows:

> "Escape was now impossible. She soon ran her jib-boom over our quarter, and ordered us to haul down our sails and colours. We were then boarded by a lieutenant, midshipman, and several men from the frigate, who informed us that she was called the Briton, commanded by Sir Thomas Staines, and ordered us all to repair on board of her, bag and baggage. We obeyed with all reasonable alacrity, although it was late in the evening before every thing was properly arranged and settled. It was a beautiful moonlight night; and I will not deny, that, as I gazed at the silver orb, I silently wished myself at Stonington. But regrets were now useless.
>
> "As soon as we were safely stowed between decks, the master-at-arms ordered a sentry to be placed over us. On the following morning, however, as the captain was examining the ship, seeing us under guard, he called to

> the master-at-arms, and demanded why the marines were placed over the Americans.
>
> "'Let them go about their business,' said he; and then, turning to the lieutenant, he added, 'let these American tars be put in messes among the ship's company; and as this happens to be the 4th day of July, a day which they always celebrate in their proud and happy country, tell my steward to give them six bottles of spirits from my own private stores, that they may drink to the memory of the immortal Washington, the father of his country.'
>
> "It is perhaps unnecessary to say that we cheerfully profited by this unexpected indulgence from a magnanimous enemy, and united in celebrating the anniversary of our country's independence on board of an enemy's ship of war, and under the flag of the same power that had so often assailed our country's rights."

The prison at Dartmoor became the abode of Mr. Morrell and his companions for more than two years, after which, embarking from Plymouth in May, 1815, he once more returned to Stonington, to the bosom of his family. Shortly after this, we find him embarked in the New York Packet, bound to Bourdeaux, about which time a violent hurricane occasioned a sad disaster in his father's establishment, by which four lives were lost in the family. After this he visited several parts of India in different ships, until his behaviour attracted the attention of one of his captains, who took him from before the mast, and did not leave him until he became master of a ship—an act of benevolence for which he records his gratitude in warm and affectionate terms.

From this period Captain Morrell takes an active course in the seal-fisheries, in command of various vessels. His first voyage, however, of this nature, was made in the capacity of chief mate of the Wasp schooner from New York, and, on visiting the Falkland Islands, he nearly lost his life, as he thus tells us:

> "I now took my brother, with the two boats well manned, and started on a cruise around the island in search of fur seal. But this day's cruise had well-nigh proved my last; for, in attempting to land, with two of my boat's crew, an accident happened which threatened fatal consequences both to them and myself. As a heavy swell was rolling into the shore, I ordered the two men to land before me, confident that I could gain the top of the rock before the next roller came in. But here I unfortunately overrated my own agility, and miscalculated the velocity of 'the saucy billow,' for, before either of us could obtain a good foothold, a very heavy roller, full fifteen feet in height, came swiftly in, and swept all three of us off the rock. Being in the rear of my men, it struck me with much greater violence than it did them, plunging me downwards with great velocity. I struggled manfully with the gigantic assailant, but before I could clear myself from the kelp and undertow, and rise again to the surface, I had become so completely strangled with water that it was useless to close my mouth, as no more could enter it.
>
> "During all this struggle, my presence of mind did not once forsake me. My thoughts flew like lightning over the actions of my past life; indeed, the rapidity with which I recalled every single transaction of departed years is truly incredible. I reviewed the whole, but, among a mass of youthful follies,

I beheld no crime for which I could condemn myself. Nothing troubled me but the idea of leaving my little family so poorly provided for, and exposed to the insults and impositions of an unfeeling world.

"Perceiving that my strength was wasting very rapidly, I made a desperate effort to swim off shore to my boat, which I saw just outside of the breakers, and near her the boat of my brother, who was pulling in, and admonishing me at the same time, in a loud but cheerful voice, to keep up my spirits for a minute or two longer, when he would be able to reach and assist me.

"All my attempts to swim off shore were frustrated by the heavy rollers, throwing me back towards the rocks. I therefore changed my purpose, and made several trials to reach the shore; but just as I could almost touch the rocks which lined it, the undertow would take me fifteen or twenty feet beneath the water. At length, when my feeble struggles had once more raised me to the surface, I found that my strength had entirely left me; and, ceasing to struggle, I passively and slowly descended, confident that I could never come up again without assistance, and feeling that after such powerful exertions and consequent fatigue, it was sweet to rest, even if it were the rest of death!

"When I had slowly sunk about two feet below the surface, in nearly an erect posture, with my face off shore, and my eyes open, I saw my brother's boat coming in, on a very heavy roller, he appearing determined to save or perish with me. As the boat came in with great velocity, I saw him standing in the bow, with a coiled line in his hand ready to throw to my assistance, which he did as soon as he came within proper distance, and with such accuracy, that the coil, settling much faster than I did, came directly over my head. Heaven gave me strength to clench it in my hand, which I did with a death-gripe, and in the next moment my brother had hold of me.

"'Stern, all!' he exclaimed, and the oars were vigorously plied to pull the boat backwards from the breakers; but before she could clear them, she came very near standing on end, or pitchpoling.

"Thus far my senses faithfully performed their several functions. I could see, hear, feel, think, reason, and draw conclusions. But the instant I was raised to the surface, and felt the breath of heaven on my face, I knew no more, but lay insensible, apparently dead, for four hours—during all which time no human strength could compel my fingers to relax their hold of the cord which, under Providence, saved me from a watery grave."

This was the first narrow escape, of the many which Captain Morrell had in the course of his voyages, for shortly after, the Wasp was beset and nearly driven on shore by the ice on one of the islands of New South Shetland. Nor was this all. The Wasp afterwards arrived at the Seal Islands in lat. 60½° S., and finding nothing to detain her, she kept her course to the south-east, and discovered an island. He was sent away in the boat to examine it, with the understanding that the schooner would pick him up afterwards to leeward of it, and gives us the following narrative of his proceedings.

"After two hours' hard rowing, our boat reached the beach, and, anxious to be the first man on shore, I resigned the steering-oar to one of the men, and sprang into the bows of the boat, from whence I leaped to land before a particle of sand had been disturbed by her keel. Here were no inhabitants either to bid me welcome or to resent the intrusion, with the exception of some twenty sea-dogs, reposing on the beach, and their tacit hospitality we inhumanly rewarded by despatching five of the handsomest, and making free with their jackets.

"On what trifling contingencies depend important events! This little adventure proved the means of saving our lives! But for the capture of these sea-dogs, our boat and crew, in all human probability, would never have been heard of more, nor would this humble narrative have ever been put to paper! But I will not anticipate.

"We now proceeded to explore the beach in search of fur-seal, and soon fell in with a yearling of the right sort. This put our lads in fine spirits, as it seemed the earnest of some heavy rookeries ahead. But in this hope we were all sadly disappointed; for, after vainly exploring above ten miles of the shore, which abounded with spots of fine beach, and places suitable for seal in a parturient state, we gave up the search in despair, and prepared to return to our vessel.

"It was now near eight o'clock, P.M., and the wind had commenced blowing a smart breeze from the west, attended with light snow-squalls. The Wasp, as we expected, was lying-to on the leeward side of the island, at the distance of about ten miles, bearing E.N.E. by compass. We unmoored, hoisted sail, and steered directly for the schooner with a fair wind, until we were within about two miles and a half of her, when a thick snow-storm set in, while the wind continued to freshen. We still shaped our course for the position in which the Wasp was last seen, lying-to with her starboard tacks on board, bearing E. b. N. half N. Consequently, we steered E. by N. for about two miles, when we commenced firing muskets every five minutes, until we judged ourselves to be near the schooner.

"Not receiving any answer to our signal-guns, we turned the boat's head to windward, took in the sails, and pulled towards the island; making, however, but very little headway. In this manner we proceeded until it began to grow dark, which, in this latitude, and at that season, was at half-past ten, P.M. At this time the haze opened a little, so that we obtained a sight of the schooner bearing S.W. by W. five miles to windward, under a heavy press of sail, with her larboard tacks on board. The island now bore W. by S. distant seven miles, as we had gained about two miles in-shore.

"The wind had now increased to a perfect gale, and our situation every moment became more and more critical. Presuming that Captain Johnson did not see the boat, and finding that we were rapidly losing ground, the crew became very much disheartened. The snow-storm again set in, thicker than ever, so that we soon lost sight both of land and vessel. The gale continued to increase in violence, and the waves in magnitude, so that it was almost impossible to keep the boat's head to windward. I now found it absolutely necessary to adopt some other method to keep her in that position than merely hanging upon our oars; for, unless her head was pointed to the seas, she would inevitably fill. To prevent such a catastrophe, I fortunately hit upon the following expedient.

"We bent or fastened one end of the boat's warp to the five seal-skins we had taken in the afternoon, and at about three fathoms' distance from the skins, we secured the oars to the same cord. In order to prevent the latter proving too buoyant, we loaded them with the boat's anchor, secured by what cordage we could command, such as the halyards and sheets of our sails. As soon as this rude apparatus was completed, we committed it to the waves, paying out about twenty fathoms of the warp, which we secured to the bow and stern thwarts, keeping it well parcelled in the chucks, to prevent its chafing. When this was all properly arranged, we stowed ourselves in the centre of the boat, and soon found that one man could now keep her free, by baling only half his time, although the sea ran excessively heavy, and the gale blew with such violence that it was almost impossible to breathe while looking to windward.

"Still, however, our little boat made very good weather of it. The oil which worked from the blubber attached to the skin so smoothed the rough billows that not a sea broke near the boat. For the space of twenty-four hours we thus rode by our floating anchor, in a tremendous gale of wind, a very heavy sea, and a violent snow-storm. During this time we must have drifted to leeward at least fifty miles, as there was no land in sight when the storm abated, and the weather became clear. Our newly-discovered island could have been easily discerned at the distance of forty miles.

"Although the storm had abated, our situation was still extremely perilous. We had neither provisions nor quadrant on board the boat, in the high latitude of 60° 30′, and were, in fact, destitute of every thing necessary to extricate ourselves from this awkward predicament. To add to the difficulties and dangers which surrounded us, the feet, hands, and ears of the crew began to be frozen. I now found myself compelled to exercise some severity towards the poor fellows, in order to prevent their perishing with the cold. That treacherous and horrid drowsiness which is ever the precursor of death by freezing, came over them with almost resistless force, and I knew that he who slept would wake no more. I therefore adopted every method I could think of to arouse their almost dormant faculties, and could only succeed by exciting some turbulent passion. I also compelled them to dip their hands and feet into the water every few minutes, to prevent their freezing any more, as I, who set the salutary example, escaped the slightest touch of the frost. The moment I felt a sensation of numbness in my extremities, I dipped the affected part in the salt-water, and the feeling was almost immediately removed.

"On the 3d of December, at nine o'clock, A.M., the gale subsided, and was succeeded by fair weather. We now weighed our floating anchor, the wind having shifted to the south, and again set sail in search of our new island. The course we steered was W.S.W., running at the rate of five miles an hour, until two o'clock the next morning, December 4th; when, to our unspeakable joy, we found ourselves close in with our little island, which we had left two days before. At four o'clock, A.M., we had the additional pleasure of discovering the schooner to the eastward, steering directly for the island, and at half-past six we were once more safe on the bright decks of the Wasp, where my brave boat's crew received the cordial embraces of their sympathizing shipmates. It was necessary, however, that this interchange of congratulation should be abridged, as my men were much frost-bitten, and quite exhausted for the want of food and rest, the little bread we had on board the boat being completely soaked with the salt-water."

The boat had very naturally been given up for lost by those on board the schooner; and had it not been for the contrivance of Captain Morrell, there can be little doubt that such would have been the case. After touching again at the Falkland Islands, he returned to New York in charge of a ship, from which time he commenced the voyages which are related in the narrative before us. Our limits preclude the possibility of going into it at present, but we shall take opportunities in some of our future numbers of amusing our readers with extracts from some of the most interesting scenes in the life of this adventurous sailor, and, as we have already predicted, we think this work will become as celebrated and as much read in the United States as Robinson Crusoe has been in England; indeed, we foresee that no American sailor will be without it; and we would recommend it to the perusal of those among our own countrymen who are desirous of obtaining the fruits of the author's experience in the various parts of those seas which he enumerates in the title.

XIII.—A SAILOR'S ADVICE TO HIS SON,* ON ENTERING THE ROYAL NAVY.

(Continued from page 286.)

LETTER VIII.—*On Religion.*

RELIGION is paramount to every subject which I have yet ventured to discuss, because it concerns not only your present and future welfare in this world, but also your eternal state hereafter.

The very prevalent opinion, that religion is of too remote and mysterious a description for the apprehension of youth, and probably that you are yet too young to be addressed on this momentous subject, has no weight whatever with me. Should I neglect thus early to impress on your mind a sense of your perpetual dependence on the providence of God, you might hereafter become remiss in your endeavours to merit his protection. I shall therefore, attempt to give you such ideas of the lasting importance of religion, and of its sacred ordinances, as may at present appear to be sufficient.

In the first place, you must consider those personages of whom you read in the heathen mythology, such as Jupiter, Juno, Minerva, &c., where they had any existence, to have been mere mortals, and, where they had none, to have been the fabulous invention of the ancient poets to personify certain qualities of the mind. The principal of these persons are supposed to have been the leaders of various tribes, which, in very remote ages of the world, colonized parts of Asia and Europe, and who, from their superior wisdom and exploits, were elevated to the rank of deities by people immersed in darkness and superstition.

The principal idea which you may yet have formed of the sacred duties of true religion will have arisen from the knowledge of your catechism, which I was very glad to hear you lately recite so well. You will remember then, that in your infancy your godfathers and godmothers promised for you that you should renounce "the Devil and all his works,"—that "you should believe in all the articles of the christian faith,"—and that "you should keep God's holy will and commandments, and walk in the same all the days of your life." But now that you are about to launch alone into the world, where scepticism, ignorance, and thoughtlessness of this important subject will surround you, those godfathers and godmothers can no longer be responsible for you; and therefore, now it is that the trial commences in yourself, of—whether you will strenuously endeavour to perform what your sponsors have hitherto undertaken for you, and by your perseverance therein for ever stand, or by your neglect thereof for ever fall. May the admonitions which you have already received from your natural guardians, be furthered by the blessing of that beneficent Being who can aid your endeavours, can enlighten your inexperience, and can perfect your proceeding in every struggle for christian rectitude!

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* At the age of thirteen.

"To renounce the Devil and all his works," consists in maintaining an inflexible resistance against every incentive to vice, against all the infidelity, the immorality, and the profligacy which may unhappily be presented to your view under the most seducing aspects.

The articles of the christian faith are contained in your Belief.

God's holy will and commandments are dispersed throughout the Scriptures, and are especially the Ten, which you can perfectly recite.

To expound to you why there exists in the constitution of your nature, as a created being, a necessity for strenuously opposing and overcoming many desires, which may seem to you an essential part of your organization, would be above your present comprehension, and my own inadequate abilities; but I may venture briefly to intimate that necessity to you, as on the practice of it may greatly depend all that is dear to you in your career towards immortality.

God is a being perfect, infinite, and eternal,—every where present, and every where supreme in might, majesty, and dominion. His word created all that may strike your observation as being wonderful and extraordinary in the works of nature. The visible manifestations of the prodigious workmanship of God are displayed in the sun, the moon, the stars, the earth, the sea, and the innumerable diversifications of animal and herbaceous life; and, lastly, in man—a being endowed with great capacity for the enjoyment of what is essentially good but subject to degradation from what is is essentially evil. It is beyond my present purpose to enter into a disquisition on the introduction of evil into any portion of the universe created by perfect wisdom and goodness: we must accept the truth of its introduction from the record of sacred history, and of its actual existence from our own daily experience. The director of the perpetual agency of evil, and its hostility to the virtue and happiness of mankind, is represented under the character of a spirit, as Satan or the Devil, whose deeds are deeds of darkness, and deeds which you are called on to renounce.

In order to effect this great design, you must look on yourself as a descendant from man, originally created pure and undegenerate, but free to the gratification of his own good or evil desires. You must believe that he fell from that state of purity by transgressing the commands of his Maker, that he became subject to the dominion of evil by the allurement of Satan, that he involved all his future progeny in the terrible consequences of that fall, and that he is now susceptible to the operations of two distinct impulses within him, the one directing him to good, the other to evil desires, which, in the language of scripture, are, in contradistinction, termed "spiritual and carnal." Natural religion is so denominated as being distinct, and existing previous to the descent of our Saviour Jesus Christ, or as adapted to the capacity for religion possessed by those who have been, or still remain, in ignorance of that pure and perfect system which he came down from heaven to introduce and exemplify, and which is denominated revealed religion.

The people of Israel, according to the testimony of all history, sacred or profane, alone had received a direct revelation of the will of God previous to the coming of Jesus Christ, who condescended to a union of his spiritual with our carnal substance, in order that the perfection of his divine nature and attributes might regenerate the adulterated spirituality of mankind, and to work their ultimate triumph over the secret machinations of their arch and subtle foe. The effecting of this mighty event is denominated the redemption and salvation of mankind.

The conviction that you are a free agent, liable to the consequences of your own adoption of good or evil, will be evident to you from this—that had the Almighty intended otherwise, by the intervention of his power he would have prevented the first fall. That you are a finite and accountable creature will also be evident to you from the frequent instances of dissolution during a mortal state, and from the unremitting suggestions of what is called conscience, as well as the utter incapability of man, in his present state, to penetrate the mysterious organization of the simplest particle of created matter, or to ascertain with precision the remote operations of its various phænomena. That you are a dependent being, you will be perpetually reminded of by contemplating the visible operations of that higher Intelligence which governs all the mystery of nature—which guides in constant harmony the starry host of heaven, and directs the revolving seasons of the year to replenish and beautify the earth—which raises the tempestuous whirlwind, and quelleth the raging thereof into perfect calmness. That you are an immortal being, the testimony of all ages, Pagan, Mosaic, and Christian, the secret aspirations of your own soul, and its assent to the awful assurances and denunciations of the gospel, will sufficiently determine: this assent is denominated faith, and must be founded not merely upon the explanations which you receive from others, but also upon an attentive and constant perusal of the Bible yourself.

The grandeur of composition in that sacred book frequently soars beyond the limits of mere mortal powers, and combines the beautiful inspiration of perfect theology with the authentic style of profane narrative, exhibiting the noblest adaptation of language to the importance of its subject. I therefore charge you to study it diligently at stated periods; never to omit reading the regular lessons of the day, especially on Sunday, and to make its precepts the objects of your most assiduous cultivation. By so doing, you will learn in time to distinguish correctly inadvertent error from wilful guilt; you will learn what estimation the inheritance of an imperfect tenet admits of in the former, and you will learn to what certain punishment a premeditated indulgence in the latter will inevitably lead.

In the Old Testament you will see the fruits of adherence to good and evil, in the fluctuating destiny of a people, whom the Almighty had peculiarly selected to render unto him honour and worship, according to ordinances given to them from heaven. You will perceive how fatally the power of evil became predominant; and that after many signal deliverances during successive ages, these people, for their obstinate perseverance in wickedness, were finally cast off. The wandering remnants of the house of Israel, which you will meet with dispersed over many parts of the globe, the mock of every illiberal scoffer, will forcibly strike you with the fulfilment of every prophecy relating to that once great and illustrious people. The persecution to which they are yet subject, will likewise suggest the humiliating reflection, that the tolerant and benignant spirit, which succeeded their downfall, is yet far from governing the hearts of mankind in regard to their fellow-creatures. And although they completed the consummation of their rebellion against God, by the crucifixion of the Messiah, and still remain incredulous to the divinity of his then rejected mission, they are on that account alone objects of commiseration to the true Christian: sufficient is it for him, while he yet beholds them indulging a fruitless expectation that the Prince of peace, foretold by their ancient prophets, would be to them an earthly prince, while he regards them as examples of the terrible consequences of incurring the anger of an offended Creator, and while he feels that all their hopes in this respect will terminate in disappointment; to leave those matters at issue between their God and themselves, and, as fellow-creatures, to sympathize in their condition, and to take them into his humane and benevolent consideration.

Throughout the scriptures, many pointed and affecting allusions are made to this downfall and dispersion of the Jewish nation; and it has been concisely recorded by their historian Josephus. But God Almighty, in his constant mercy towards man, chose to institute upon earth another code of religion, and to supersede the splendid ceremonial of the Mosaic church, by a ritual of pure and undecorated simplicity. The introduction, the dissemination, and the exemplification of this holy religion, forms the subject of the New Testament.

At that eventful era of the world, mankind had become so universally immersed in darkness, depravity, and estrangement from the true God, so entirely given up to all sorts of abominable idolatry, that nothing short of superhuman means could reclaim them: nay, so deeply were they plunged into the abyss of guilt and crime, that, but for the intervention of his only Son, they would for ever have been separated from him; and their posterity, instead of becoming children of heaven, would have remained the children of the Devil, doomed to eternal condemnation. May you hence be warned of the dreadful consequences of yielding to evil, and ever resolutely abide by what is good!

The New Testament will inform you how transcendently awful was the effecting of this redemption in the person of our Lord Jesus Christ, the participator of the everlasting Godhead, the Sovereign of thrones, of the dominions of cherubim and seraphim, the Prince of peace, the King of kings, and Lord of lords, who voluntarily rendered himself a sacrifice and propitiation for the sins of a self-debased generation of men, who voluntarily descended to the lowest estate of mortality, to be unto them an example of a pure and enlightening system of perpetual self-denial, of patience and meekness, of humility, of chastity, of charity, of benevolence, and of holiness, the adoption of which could alone unfold to them the pathway to heaven, and could reconcile them unto their offended Maker; teaching them that the soul of every man, by stedfast adherence to his righteousness, may become a temple of the living God. Intense should be our gratitude, and unceasing our endeavour to imitate this great and glorious example; but it has yet to work its way in opposition to human passions and prejudices, instigated and arrayed against it by his evil adversary. On these awful subjects of eternal redemption and condemnation, the shallowness of human casuistry is too apt to disperse before the inexhaustible artifices of that crafty and active enemy; and from the sacred page in which are recorded the miracles and doctrines of our Saviour and his apostles, you can alone draw forth an impenetrable phalanx of spiritual array, which will render you invulnerable to his most insidious attacks. This mighty struggle in the inner man is in reality taking up the cross, which must be done by every faithful soldier of Jesus Christ. How insignificant are all the transient honours, the successes and vicissitudes of his industry in this life, when compared with that supreme triumph which rends the veil of mortality from his heart, and, through the merits of his great Redeemer, presents him before the throne of God a conqueror, seeking immortal glory.

The magnificence of this idea must, nevertheless, be tempered by many considerations of his own present unworthiness; it is a triumph unseen by the world, and should not be obtruded there; for although in its most extensive form Christianity is replete with vast and astonishing sublimity, the peculiar spirit of it likewise is to be always exempt from self-righteousness, and to descend to domestic usage as a familiar friend extending a charitable consideration and forbearance over the infirmities of all its associates. Nor must you look upon those who are unhappily removed from the knowledge of it with any feeling of inward superiority: on the contrary, you must be ever ready to extend towards them the advantages which you enjoy with conciliating candour, grace, and humility. At God's appointed time, Christianity is destined to circulate throughout all the regions of the earth; from whence, for purposes unknown, excepting to Omnipotence alone, it is at present withheld: and you must consider it a never-failing source of gratitude unto him, and a reason for rejoicing in your heart, that you have been born where its wise and holy dispensations are so extensively disseminated.

One of the most convincing proofs of the divine origin, verity, and authenticity of the Christian religion is, that it contains principles of conduct, which human reason could never have conceived. The reveries of the wisest of heathens fall far short of its perfect discipline, its unostentatious piety, and its beautiful morality. Before it appeared, "to bring life and immortality to light," the whole world had never imagined a system calculated to preserve those who stedfastly adhere to it in perpetual amity, harmony, and peace; and the plain incontrovertible maxim in one sentence of the gospel, "Love your enemies," overthrew in a moment all the speculations formed in ages of an erroneous philosophy. I cannot then too early recommend to your constant perusal the volume which contains the entire series of its pure and holy doctrines. The sacred character of our Saviour himself exhibits their utmost power and perfection. Among his apostles there are some shades of difference, for we must not expect them to equal their Lord; but the miraculous conversion, the unconquerable resolution, the noble, the affecting, and the argumentative eloquence, the unwearied perseverance, and the comprehensive labours of St. Paul, establish him as one of the most mighty pillars of the kingdom of Jesus Christ. The mild, contemplative, and dignified character of St. John the Baptist; his highly exalted office in being the appointed predecessor and baptizer of the Son of God; the elevated and heavenly resignation of St. Stephen, and the warm, rich, and useful piety of the erring St. Peter, sufficiently indicate that our Lord chose to work his Father's will by instruments variously constructed, and, from the miserable slavery and perdition of sin, to lead mankind unto a knowledge of righteousness by means best known to himself. I sincerely pray that you may strenuously endeavour to march on under his sacred banner, "conquering and to conquer." If you do so, the great Jehovah himself will grant unto you "all things that are needful for your soul and body;" he will be merciful unto you, and forgive your sins; he will save and defend you from all dangers, ghostly and bodily—from your ghostly enemy, and from everlasting death."

Avoiding all allusion to the various schisms, which have led to the division of the Christian church into so many sects, I have in the foregoing attempted to give you a brief sketch of the great outlines of its prevailing character; and I shall close this imperfect letter with the further observation, that in commemoration of the last awful assemblage of our Saviour and his disciples previous to his crucifixion, the most solemn rite belonging to it was instituted by his especial injunction. I therefore hope that you will assiduously prepare yourself to receive the holy sacrament, when you have attained the suitable age; that you will afterwards continue to do so at every opportunity, and by that means strengthen yourself in the resolute practice of a pure and holy life.

Humbly conceiving that the Established Church possesses every means to secure the salvation of its followers, provided they be true to themselves, I wish you to conform to its principles. Should you ever hear its venerable institutions made objects of disrespectful allusions by any thoughtless companion, it will be your duty quietly to discountenance all such idle and profane levity of conversation.

(To be concluded in our next.)

LITERARY AND SCIENTIFIC NOTICES.

BOOKS.

TABLES des Principales Positions Géographiques du Globe. Latitudes and Longitudes of principal places on the globe, according to the most recent authorities. By P. J. COULIER. Paris.

This is an attempt to collect in one work the latitudes and longitudes of all principal places, arranged in alphabetical order for immediate reference. The utility of such a work is evident, and the difficulties in the way of its construction are no less apparent. While it must be admitted that a work of the kind can never be perfectly completed, an attempt to produce one as complete as our knowledge will allow it to be, must be the more appreciated; and, notwithstanding the useful nature of such a work, we know of nothing of its kind, on so large a scale as this, in our own language. M. Coulier, with the perseverance required for such an undertaking, has waded through a long catalogue of works, the names of which he has given at the commencement of his Tables, and has extracted the positions of about twenty thousand places. His work, as a general reference, is most useful; and we shall be glad, not only to see it in a more extended edition, but also to find his example followed in our own land.

USEFUL GEOMETRY practically exemplified by a series of Diagrams, with clear and concise directions, shewing the construction, &c., of Plane Figures, &c. By CHARLES TAYLOR. London. Sherwood. 1832.

This is decidedly a useful little book, although we would have liked it better had the author of it given his readers the mathematical reasons for the truths of his geometrical constructions. We would have been contented, on finding the mere statement of the grounds on which his several problems rest. For instance, we will take one among the various methods he gives of drawing a perpendicular line.

At page 8, the pupil is given the method of drawing a perpendicular line to another, from its extremity, by the employment of a semicircle, but he is not told the reason of the line being perpendicular, and that it depends on the mathematical truth that the angle in a semicircle is a right angle. Such hints as these would have been most valuable additions to Mr. Taylor's work, and would have satisfied the mind of the student *why* such things are. At present he has but a sandy foundation to work upon. Notwithstanding this, however, we cannot but approve of the pains bestowed by Mr. Taylor in arranging the numerous problems which he has introduced in so concise a form as that of a little pocket-book, for the small amount of five shillings. He has introduced most of the useful problems required by the mechanic, and explained their construction in a clear and simple manner, and to assist him the work is well calculated. We have little doubt, however, of its being productive of further benefit, for we think it well adapted to incite the mind of the reader to further inquiry; and if he only investigates the reasons for what he does with its assistance, he will have no occasion to regret his having met with it.

An elaborate vocabulary of scientific terms is given at the conclusion of the work.

NEW NAVAL INSTRUCTIONS.—We hail with pleasure the appearance of a new "Book of Instructions" for the naval service:—Instead of having to refer to three books, two of them cumbrous 4tos., and a number of "Circulars," as heretofore, the whole have been revised, condensed, and published in the more convenient size of an 8vo. volume, with an index, by which reference may be easily made to any article that may be wanted. Doubtless, there are many improvements, but our attention has been more particularly directed to the Instructions for the "Exercise and Service of the Great Guns," the most important point in a ship of war, and a subject which latterly has received the attention it deserves. We must, however, reserve our remarks on this subject for our next number.

THE NEW NAUTICAL ALMANAC.

CHANGES IN RULES OF NAUTICAL ASTRONOMY.

(Continued from page 290.)

Finding Variation of Compass by Azimuth or Amplitude.

26. The only change will be in getting a Greenwich date in mean time, and taking out the declination for that date, as directed in above articles.

Finding Time of High Water.

27. In the New Nautical Almanac the instant of the moon's transit is put down (page IV.) in mean time. The time of high water at change of the moon is given at different places in *apparent time*, and indeed cannot be generally expressed in *mean time*. This circumstance must create some little additional trouble to seamen. The best way of proceeding will perhaps be the following:

Find the time of the moon's meridian passage as usual from the Nautical Almanac. Then enter the Tide Table with this time increased or diminished, by the *equation of time* for the day, according as in the Nautical Almanac it is directed to subtract or to add. With the correction thus got from the Tide Table, proceed as heretofore. The result will be the time of high water required in *mean time*.

Equation of Equal Altitude.

28. There will be no change in the rule for finding the equation of equal altitudes, except in getting the necessary Greenwich date in mean time, instead, as before, in apparent time.

Longitude by Meridian passage of moon's enlightened limb.

29. Get as accurately as possible a Greenwich date in mean time;* and

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* Where there is a chronometer, this date is best got by applying error to the time shewn by it at observation. When there is not, it must be found by applying the estimated longitude in time to the ship mean time. Ship mean time must be found by determining as near as possible by observation the error of a chronometer or common watch on ship mean time, by altitudes of heavenly bodies taken as near as possible E. or W. of meridian; both E. and W. if it can be done.

But as this method of determining the longitude is generally applicable only on shore, the R.A. of the moon's enlightened limb may be supposed to be known at the instant of the observation from a sidereal clock, whose error has been determined by meridian passages of stars near the moon; to which the moon's semidiameter being applied, the result is R.A. of moon's centre in time.

also the ship date in mean time. For the Greenwich date take out of the Nautical Almanac *sidereal time at mean noon*, the moon's R.A. to the nearest hundredth of a second, the moon's declination to the nearest tenth of second, and moon's hor. semidiameter to nearest tenth of second.

Add *prop. log*. of hor. semid. to *log. cos*. decl. (rejecting 10,) the result will be *prop. log*. of hor. semid. in R.A., which find to nearest tenth, and turn into time to nearest hundredth of second; add *sid. time at mean noon* to ship *mean time*; then add or subtract semid. in R.A. in time according as the W. or E. limb of moon has been observed, the result will be the R.A. of moon's centre in time. If this be exactly the same as the R.A. taken from the Nautical Almanac, the Greenwich date must have been right; if not, find the interval corresponding to the difference (by knowing the change in 12^h or 3600^s from the Nautical Almanac,) and correct the Greenwich date by this interval. Repeat the work in this manner, till the result agrees exactly with the last Greenwich date used. Greenwich mean time will thus be known, and thence the error of a chronometer or watch on it: also the true longitude may be found by taking difference between Greenwich mean time and ship mean time.

(To be concluded in our next.)

CHARTS.

SOUTH AMERICA, EAST COAST, *chiefly from the French Survey by Baron Roussin, Capitaine de Vaisseau, &c. in* 1819-20.

We do not know any charts more wanted than these, nor any that are likely to prove more useful. Before the appearance of Baron Roussin's charts of the Brazilian coast, which, as general sailing charts, are very accurate, we were dependent on various authorities, most of which were considerably erroneous. The present series is founded principally on the surveys of Baron Roussin, combined with the more recent information of naval officers employed on that coast, and consists of four charts, the three southernmost of which are now published in double-elephant sheets.

Sheet 2. Includes the coast of Brazil from Maranham to Pernambuco. The
No. longitude of Maranham Cathedral is laid down as 44° 15′ W., being
1013. the result of observations by Captain Sabine and Commander Foster, and that of Fernando Noronha in 32° 24′ W. The coast-line is reduced from the survey of Roussin. This sheet also contains plans of the Manoel Luiz Shoal, which for so long a time eluded the search of navigators, and was a terror to all who frequented the coast in its neighbourhood. It contains likewise a plan of Maranham, the River Aracati, from a survey by Mr. R. Dixon, commander of the brig Westmoreland, and the Rio do Norte, by Lieut. E. Scott, R.N.

Sheet 3. Includes the coast of Brazil, from Pernambuco to Espiritu Santo.
No. The meridian distance between Bahia Lighthouse and Rio Janeiro was
1027. determined in four successive passages, by Captain Fitzroy, in H.M.S. Beagle, and served to fix the position of the former, the latter being considered in 43° 7′ 58″ W. which is the mean of many observations by the most experienced navigators. This meridian distance gives Bahia light in 38° 30′ 34″ W. as it is now finally laid down. Captain Hewett's plan of Pernambuco is introduced on this chart, as well as a plan of Bahia, by Baron Roussin, and it likewise contains a plan of the bay of Espiritu Santo, and the channel through the Abrolhos.

Sheet 4. No. 1038. Includes the coast of Brazil, from the bay of Espiritu Santo to the harbour of St. Catherine's. The longitude of Vilganhon at Rio is considered as 43° 7′ 56″ W. being the mean of the measurements by a great number of officers. The latitude was taken from the observations of Captains Owen and Foster, which corresponded exactly; and the meridional distance between Cape Frio and Saint Catherine's was determined by Captain Foster. Some of the details of the coast, particularly about Rio Janeiro, have been taken from the surveys of Mr. J. Napier and Mr. J. Engledue, masters of the Royal Navy, and the charts of the Portuguese Admiral Campbell have also been of much service. Between Cape St. Thomé and Egg Island, the charts of Mr. Bruce have been adopted, with the positions of Baron Roussin and various additions. There is much reason, from the nature of the soundings, for supposing that a bank extends along the coast to the northward of Cape St. Thomé, and particularly where the Tam o' Shanter of London is said to have struck. A place further off the coast, in nearly the same latitude, wears a suspicious appearance, and will require a vigorous attention to the lead, from a vessel in its neighbourhood.—We consider these charts as a most valuable and important acquisition to the navigator, who cannot make himself too well acquainted with them.

Professor Barlow's Variation Globe.

Mr. Barlow has been for some time engaged in collecting and arranging all the Magnetic Observations on the dip and variation of the needle, made in the recent voyages and journeys of discovery, surveys, &c. undertaken by the British and by foreign governments, in order to place on record the actual present state of Terrestrial Magnetism. With the above aid, and an unrestricted reference to the numerous documents in the Hydrographical offices of the Admiralty and East India Company, he has been enabled to obtain an immense number of well-authenticated results. These he has delineated on a fifteen-inch terrestrial globe, thereby shewing the entire system of lines in their actual form, and in regular continuity; the east and west variations on the oceans, and the north and south dips on the land, being distinguished by different colours, in order to relieve the eye, and assist the mind in the general comprehension of the whole.

Some friends having expressed a desire of possessing a globe of this kind, Mr. Barlow proposes to have an engraving made, and globes constructed, if he can obtain a sufficient number of subscribers to exonerate him from personal expense. Any gentleman wishing to forward this work, either for its own sake, or for the sake of the general progress of science, will have the goodness to inform him by letter.

The globe will be mounted on an appropriate stand, the price the same as the usual terrestrial globe of fifteen inches, (three guineas.) The engraving will be commenced as soon as fifty subscribers have been obtained.

A paper, describing the Professor's mode of proceeding, in forming this variation globe, has been lately read before the Royal Society; and we had prepared a little account of it for our readers, but are obliged, from want of space, to reserve it for our next number.

Rowland's Double Sextant.—We are happy to find that this valuable invention is at length completed. Mr. Rowland has succeeded in finishing the model of a sextant, in which the principle of double reflection is turned to a good account, and has produced an instrument with which any angle in the arc of the semicircle may be measured by obtaining at once the sum of two acute angles. The advantages of such an instrument to the navigator and the surveyor will be very great; for the best sextant or circle ever yet made has been an imperfect instrument in comparison with the double sextant, inasmuch as neither of them would give the measure of an angle beyond certain limits.

The instrument has been presented to Vice-Admiral Sir Robert Stopford, who officiated as president of the committee to which Mr. Rowland first submitted his invention, and who encouraged the inventor by recommending that a sum of money sufficient for the purpose should be allowed him, to complete his instrument. By this invention, we consider that the method of obtaining all angles by reflection may now be brought to that perfection which the laws of it will admit, combined with the exquisite workmanship of our modern artists in this line. Captain Hewett of H.M S. Fairy is directed to report on it, and we hope shortly to see it published, and in general use. In a future number, we will lay a description of it before our readers.

GLASS BALANCE-SPRINGS OF CHRONOMETERS.—We understand that this invention of Messrs. Arnold and Dent promises to realize the most sanguine expectations that have been formed of it. By a comparison between it and a metal spring without compensation being applied to the balance, it has shewn great advantages. In a range of 70° of temperature, from 30 to 100° of Fahrenheit, the metal spring varied 19 seconds, and the glass spring only 1·5 seconds, proving thereby that the compensation, which is probably the most difficult element to introduce into the chronometer with the usual steel spring, may be almost dispensed with in one with a glass spring. Messrs. Arnold and Dent have already shewn in some of our preceding numbers the disadvantages arising from moisture, besides those proceeding from a change of temperature, to which the steel balance-spring is liable; and the invention of the glass balance-spring being calculated to remove all these entirely, may justly be considered as the most important feature of recent chronometrical science. We understand that it is not their intention to fetter this discovery with a patent, but rather to leave their invention to be improved on by their competitors in the trade, for the benefit of the science. While we cannot but admire this generous mode of proceeding, so different from the usual course adopted by the discóverers or the proprietors of any valuable improvement, we hope to see this spirited measure appreciated by the scientific world; and, that Messrs. Arnold and Dent may receive that patronage, when their invention shall be fully matured, and the merits of it fairly stated, to which they only are so justly entitled. We believe that it is their intention to apply to the Lords Commissioners of the Admiralty for permission to extend their experiments at the Royal Observatory, for the improvement of chronometrical science.

PORT WILLIAM AT REDCAR.—In our last number, we offered some remarks on the national importance of a harbour in the Tees bay, and the numerous advantages afforded by Redcar for one, accompanied by a plan projected by Mr. Brooks, civil engineer at Stockton. One or two typographical errors found their way into them, which we are anxious to correct, although a reference to the plan would shew them to be so. The depth at the entrance of the harbour is five fathoms at low-water, instead of three, a depth sufficient for any ship. The southern pier will be 6300 feet in length, instead of 300 only, a material difference in a work of this kind, from which also some idea of its magnitude and importance may be formed. We have expressed our conviction already that this plan will sooner or later be carried into effect, and we are glad to find, that as its advantages are becoming known, it is acquiring friends. At the last annual meeting of the Tees Navigation Company, the proposal was cordially received, and at once seconded by a determination, on the plan being adopted, to carry Mr. Brook's proposal of a ship-canal to Cargofleet into immediate effect.

STEAM VESSELS.—A high-pressure steam-engine, with an improved boiler, by Mr. George Mills of London, is now fitting for trial on board the Falcon, an old 10-gun brig, in the basin at Sheerness.

In this engine the steam is raised by fire-tubes passing through the boiler, which is surrounded at a slight distance by a double cylinder, filled with cold water, serving as a surface condenser. The boiler will bear a pressure of at least 150 lbs. on the square inch, and is therefore safe for high pressure. The advantages appear to be—1st, That the engine is of less weight, and occupies much less space. 2d, Great saving in fuel—nearly ⅔. 3d, Steam raised in less time. 4th, Fresh water supplied at first, not wasted. 5th, Engine-room kept at a low temperature, &c. &c.

The Falcon is fitting with 2 engines of 50 horse-power each, and it is expected will be ready for trial about the latter end of June.

ROYAL NAVAL SCHOOL.

Report at the General Meeting, 23*d May*, 1833.

THE Council for administering the affairs of the Royal Naval School, in laying this Report of their proceedings during the past year before the Service, and others interested in the success of the Institution under their charge, are happy to state, that scarcely a single point will be found in it, on which there is not subject for congratulation.

A temporary School has been opened for the immediate reception of One Hundred and Fifty Boys; and if the sense of the General Meeting be in favour of extending this accommodation, it can be done at a moderate expense. Meanwhile the provisional number of Pupils is complete, including two admitted gratuitously, and four on a reduced charge, as prescribed by the Fifteenth Article of the General printed Resolutions. The expense to the others will be £25 this first year, (subject to such reduction as may be found practicable in future years, consistently with the other objects of the Institution, but) including every necessary charge, unless for expenses obviously personal.* The requisite establishment for this number of boys is also complete; and, so far as can be yet judged, the appointments have been satisfactory. The necessary medical attendance has been secured from the ranks of the profession, and it is due to its liberality to add, for the present year gratuitously. The terms for tuition, and the contracts and other arrangements entered into for provisions and supplies, are such as to hold out the certain prospect of the Institution being enabled to bestow an excellent board and education, at the present moderate rate of charge, even with the actual limited number of boys: and were this number increased, still greater economy could certainly be introduced.

It will be desirable, however, to enter somewhat more into detail, and to indicate the successive steps by which the Council has attained its present favourable position. The first great difficulty which it had to encounter was, that of finding a suitable house for the purposes of the Institution. A very strong wish was entertained by many Members, that a proper building should be at once erected on Crown land, which it was ascertained would be readily granted for the purpose; but it was soon felt, from the actual state of the funds and other circumstances, that considerable delay would be thus incurred, and that a temporary, if even more limited establishment, was preferable. Advertisements were therefore inserted in the newspapers, and inquiries made by the Members and their friends; places favourably described were visited; and the neighbourhood of London, to the extent of not less than fifteen miles in every direction, was thus diligently examined, in hopes of finding adequate and convenient premises; but for a considerable time in vain. At length, Alfred House, Camberwell, originally constructed and constantly used for a large school, came to be considered by the Council, almost unanimously, as offering the best accommodation; and arrangements were accordingly made with the proprietor, Mr. Wanostrocht, by which it was placed at the disposal of the Institution, for a term of three, five, seven, fourteen, or twenty-one years, at the option of the Council, at a rent of £250 a year. And on these terms this excellent house, with three acres of ground, the whole conveniently distributed for the purposes of a school, is now held.

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* As postage of letters, pocket money, repair of clothes, &c.

The next task of the Council was, to see the premises thus obtained slightly altered, painted, and furnished, as seemed requisite for their new destination; in which operations, as in the previous examination both of them and many other houses, they were most ably, kindly, and gratuitously assisted by Mr. Taylor, architect and surveyor to the Admiralty, and Mr. Cantwell, who last year surveyed Hartwell House on the same liberal terms. Under the inspection of these gentlemen, plans were made, and estimates taken;—the execution of which, when agreed on, was confided to Messrs. Moreing and Wright, builders. And it may be quoted as a singularity in works of this nature, testifying at the same time to the honour and good faith of those employed, that the accounts rendered for these works, when completed, were £20 below the estimates for them previously given in.

When about to furnish, estimates were also taken; in considering which, the Council did not strictly confine itself to the lowest offers, but carefully sought to combine attention to economy in the first outlay, with a due regard to neatness and durability. And when the tenders for victualling came under consideration, the same general principle was adhered to, and quality and price were regarded together.

When the time came to choose the Masters, a minute was first agreed on, and extensively circulated, specifying their number, with the duties which would be allotted to each; and advertisements were inserted in the newspapers, inviting Candidates. Of these, accordingly, a considerable number offered themselves; and first a Committee was appointed to class them according to their testimonials, and afterwards the Council examined these itself, with the utmost care and anxiety. The result was, that the Rev. H. Pemble, M.A. of Trinity College, Cambridge, who was very strongly recommended both for his literary attainments and long experience in tuition, was elected Head Master; and with his entire concurrence and approbation, expressed after he had examined all the candidates, Mr. Robert Middlemist was elected Mathematical, and Mr. John Harrison, Grammatical Master. The first, besides possessing considerable experience in tuition, had served long in the office for computing the Nautical Almanack, from which he was very strongly recommended; and the second was entirely educated at a Madras school at Liverpool, of which he rose afterwards to be one of the Masters, and in this capacity his conduct had been highly approved and commended by Dr. Bell himself. His appointment, therefore, not only promised to be very useful to the Institution, but seemed also, in some measure, a compliment to the memory of its great benefactor, which the Council was most happy to have so favourable an opportunity of paying.

In the appointment of French Master, a preference was given to the claims Lieutenant Turrell of the Navy, who was early led to turn his attention to the business of tuition when a prisoner of war in France; and was in consequence appointed senior French Master in a school established at Verdun in 1812. He was afterwards a most successful French teacher at Brussels; and further produced the highest testimonials of his qualifications from the masters of several large schools and academies in this country, in which he had taught. Mrs. Hunt, the daughter of an old and much esteemed Officer, the late Captain Anthony Hunt, and who had for many years assisted her mother as one of the Matrons of Greenwich Hospital, was chosen to be Housekeeper. The Steward, Serjeant James Secker, besides his other recommendations, which were strong, (having served as Steward of the Hospital at Chatham,) was a Serjeant of Marines on board the Victory at Trafalgar, and assisted to carry Lord Nelson below. In a word, all the appointments were thus given under the influence of a strong desire to consider the good of the Institution first, but with it whatever claims individual applicants might have on the service at large; and the Council flatters itself that it has succeeded generally in reconciling both, to a great extent.

Another subject of anxious consideration was the election of Children to the gratuitous and reduced List, under Article 15 of the General Resolutions; and it may be added, that it was only after long deliberation, that the Council became satisfied of the expediency of appointing any such at all, during the first, or experimental year. Eventually, however, it was resolved that two should be admitted gratuitously, and four on the reduced List; and steps were taken to invite applications, and select the most pressing cases from among them, for preference. A proper delicacy to the several parties forbids entering further into detail on this head; but the Members of the Council are persuaded that they will have the full confidence of their brother Officers, when they assure them that no personal favour was admitted into any part of the transaction, and that, according to their best judgment and information, the claims of all parties were equitably weighed.

The council feels it now necessary to advert to the loss which the Institution has sustained within the last few weeks, by the resignation of Lieut. Brand, whose services, while he filled the situation, first of Secretary and afterwards of Secretary and Accountant, were above all praise; and who has the whole merit of the perfect order and regularity in which the very complicated Accounts of the Institution are kept. It was thus extremely difficult to supply his place, and a professional Accountant, Mr. Tate, was appointed to examine all candidates for it; on whose favourable report Mr. Hope, Purser, R.N., was eventually appointed.

In conclusion, the subjoined balance sheet* of the receipts and expenditure during the past year will be submitted to the General Meeting—with the estimates for the ensuing year, which shew at the same time the salaries allowed to the Masters and other Members of the Establishment, and the scale of victualling adopted in it. Some modifications and alterations in the General Resolutions, the necessity for which has been suggested by experience, will be submitted to the Meeting for their consideration.

The first object of the Council is to learn the wishes of the Service and the Subscribers in general; the next, to carry these wishes into effect, with a sincere desire for the promotion of unanimity and concord among all the friends and patrons of this interesting Institution.

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* This will appear in another number.

The following is a list of the newly elected Council :—

PRESIDENT

Vice-Admiral Sir Edward Codrington, G.C.B.

VICE-PRESIDENTS.

Vice-Admiral Robert Lambert.
Rear-Admiral Sir Jahleel Brenton, Bart. K.C.B.
Capt. the Right Honourable Lord Selsey.
Major-General Sir James Cockburn, Bart.

DIRECTORS.

Vice-Admiral	J. R. D. Tollemache.
Do.	The Hon. Sir T. B. Capel, K C.B.
Do.	The Hon. Sir Courtenay Boyle, Knight, K.C.B.
Captain	Right Hon. Lord A. Fitzclarence.
———	Right Hon. Lord Byron.
———	Francis Fead.
———	The Hon. Frederick Spencer.
———	R. L. Baynes.
———	Jenkin Jones.
Commander	J. B. Smith.
———	Alex. Maconochie.
———	Montagu Montagu.
Lieutenant ..	William Gardiner.
———	G. P. Rosenberg.
———	Henry Raper.
———	A. B. Becher.
Rev.........	Samuel Cole, D.D.
Colonel	Sir J. B. Savage, Knight, R.M.
Lieut.-Colonel	David Robinson.
Surgeon	Sir Richard Dobson, Knight, M.D.
Dr.........	James Domville.
Purser, ...	John Brenton.
———	John A. Lethbridge.

The second Annual General Meeting for 1833, for the friends of this Institution, will be held on Tuesday the 11th June, at Willis' Rooms, King Street, St. James's, at two o'clock, instead of Thursday the 6th June, as previously advertised.

At the meeting held on the 23d inst. it was moved as an amendment to the latter part of the second paragraph of the first section of the Resolutions, "That the general charge to pupils shall not be reduced from its present amount of £25, till the whole annual interest of Dr. Bell's money, and his Majesty's annual donation of £100, shall be applied exclusively to the support of boys on the gratuitous and reduced lists," which motion was negatived.

The Council will therefore bring this question specifically before the General Meeting, on the 11th June, for a renewed and more deliberate decision; as it is most desirable thus to ascertain whether the first wish of the service be to lower the general charge, or to increase the gratuitous and reduced lists.

[This is a case of no great difficulty, and appears to resolve itself into the following question, whether the WHOLE PROFESSION is to benefit by the establishment of the school, as far as its advantages are and may be in future extended, or whether a comparatively *small portion of the profession* only is to derive those benefits at once in their fullest extent. We suspect that an acquiescence in the former proposition will be found more in unison with the nature and purpose of the institution.—EDITOR.]

NAUTICAL MISCELLANY.

NAVAL INTELLIGENCE.

The Royal Navy in Commission.

⁂ S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

Actæon, 26—Hon. F. W. Grey, 2d Feb. at Naples.

Ætna, S. V. 6—Com. E. Belcher, sailed for Mediterranean, to survey the Esquerque shoals.

African, St. V. — Lieutenant J. Harvey, 14th April arrived at Plymouth.

Alban, St. V. — Lieut. A. Kennedy, 23d March arrived at Plymouth. Refitting.

Alfred, 50—Capt. R. Maunsell, 2d April at Malta.

Algerine, 10—Com. Hon. J. F. F. De Roos, 10th Feb. arrived at St. Helena, 13th sailed for Rio.

Alligator, 28—Capt. G. R. Lambert, 24th Sept. Singapore. 25th sailed for Manilla.

Arachne, 18—Com. W. G. Agar, 28th Feb. at Barbadoes, 1st April at Jamaica.

Ariadne, 28—Capt. C. Phillips, 8th Feb. at Port Royal, Jamaica.

Asia, 84—Flag of Rear-Adm. Parker, C.B., Capt. P. Richards, Tagus.

Astrea, 8—Capt. W. King, Falmouth.

Athol, *Troop Ship*—Mr. A. Karley, 22d Feb. sailed for Demerara.

Badger, 10—Com. G. F. Stowe, Simon's Bay, 20th Dec.

Barham, 50—Capt. H. Pigot, 2d Feb. at Napoli di Romania. Flag Ship (*e*).

Beacon, (late Meteor)—Com. R. Copeland, Archipelago.

Beagle, 10—Com. R. Fitz-Roy, 27th March at Rio.

Belvidera, 42—Capt. Hon. R. S. Dundas, Feb. at Tripoli.

Blanche, 46—Capt. A. Farquhar, K. H. C. B. Feb. at Jamaica.

Brisk, 3—Lieut. J. Thompson, 17th Feb. sailed from Sierra Leone.

Britannia, 120—Capt. P. Rainier, Tagus, sailed 25th.

Britomart, 10—Lieutenant H. Quin, 11th May sailed for Sierra Leone, with Sir J. Jeffcot, Judge of Vice-Adm. Court there.

Buffalo, *Store Ship*—Mr. F. W. R. Sadler, *Master*, 7th May arr. Portsmouth, 12th May sailed. Capt. Sir R. Spencer, Governor at King George's Sound, and family, embarked for a passage.

Caledonia, 120—Captain T. Brown, 28th April arr. at Plymouth.

Carron, St. V.—Lieut. Com. J. Duffill; sounding off Isle of Wight.

Castor, 36—Capt. Rt. Hon. Lord John Hay, Downs.

Ceylon, 2.—Lieut. H. Schomberg, Malta.

Challenger, 28—Capt. C. H. Freemantle, 11th Nov. sailed for Valparaiso.

Champion, 18—Com. Hon. A. Duncombe, 2d April arr. at Malta.

Charybdis, 3 — Lieut. Com. R. B. Crawford, Gambia.

Clio, 18—Com. J. J. Onslow, 19th Feb. at Rio.

Cockatrice, 6—Lieut. Com. W. L. Rees, 10th Jan. arr. at Buenos Ayres from Rio, 14th sailed for Monte Video.

Cockburn, 1—Lt. Com. C. Holbrook, Kingston, Lake Ontario.

Columbia, St. V. 2—Lt. Com. R. Ede, 14th May sailed for Plymouth.

Columbine, 18—Com. O. Love, 1st April at Jamaica.

Comet, St. V.—Mr. T. Allen, Woolwich.

Comus, 18 (late Comet)—Com. W. Hamilton, 26th March, arrived at Madeira. 27th, sailed for West Indies.

Confiance, St. V. 2—Lieut. Com. J. W. Waugh, Plymouth.

Conway, 28—Captain Eden, 4th May arr. at Portsmouth, 8th sailed for Lisbon and Oporto.

Cordelia, 10—Com. C. Hotham, 2d April at Malta.

Curaçoa, 26—Capt. D. Dunn, 18th Jan. at Bombay.

Curlew, 10—Com. H. D. Trotter, 14th Feb. at Sierra Leone, 17th sailed.

Dee, St. V. 4—Com. R. Oliver, 8th May arr. at Portsmouth, 11th May passed Plymouth on her way to Mediterranean with Vice-Admiral Sir P. Malcolm, K.C.B.

Dispatch, 18—Com. G. Daniell, 5th Jan. arrived at Havana.

Donegal, 74 — Rear-Admiral W. H. Gage, Capt. J. Dick, Downs.

Dromedary—R. Skinner, Bermuda.

Druid, 46—Capt. S. Roberts, C.B. 31st March, off Oporto.

Dublin, 50—Capt. Rt. Hon. Lord J. Townsend, 20th Nov. left Valparaiso for Callao, 30th arrived.

Echo, St.V. 2—Lieut. Com. Otway, Oporto.

Excellent, 58 — Capt. T. Hastings, Portsmouth.

Fairy, S.V. 10—Com. W. Hewett, Sheerness.

Favorite, 18—Capt. J. Harrison, 12th March off Prince's Island.

Firebrand—Lieut. W. G. Buchanan, Woolwich.

Firefly, 2—Lieut. J. M'Donnel, Bahamas.

Firefly, St. V.—Lieut. T. Baldock, 6th April, arr. at Falmouth.

Flamer, St. V. 6—Lieut. R. Bastard, 20th April, arr. at Falmouth.

Fly, 10—Com. P. M'Quhae, Feb. Carthagena.

Forte, 44—Capt. W. O. Pell, Plymouth.

Gannet, 18—Com. M. H. Sweney, 16th March arrived at Barbadoes.

Griffon, 3—Lieut. Parlby, Africa.

Harrier, 18—Com. H. L. S. Vassal, 25th Oct. arr. at Madras from Calcutta.

Hermes, St. V.—Lieut. J. Wright, 15th April at Gibraltar, 19th sailed for Malta.

Hornet, 6—Lieut. F. R. Coghlan. 20th Oct. sailed for South America.

Hyacinth, 18—Com. T. P. Blackwood, 27th April arr. at Portsmouth, 19th May sailed for East Indies.

Imogene, 18—Capt. P. Blackwood, August, at Malacca.

Investigator, 16, S. V.—Mr. G. Thomas, Shetland Islands.

Isis, 50—Flag of Rear-Adm. F. Warren, Capt. J. Polkinghorne, 23d Nov. Mauritius from Cape.

Jackdaw, S. V.—Lieut. E. Barnett, 22d put into Plymouth, 24th sailed for West Indies.

Jupiter, *Troop Ship*—Mr. R. Easto, 7th Jan. sailed for Mauritius. 16th, arrived at Cape.

Kangaroo, 3—Lieut. T. Hickey, Bahamas. 8th Dec. at Havana.

Larne, 18, (*late Lightning*)—Com. W. S. Smith, 10th May sailed for West Indies.

Leveret, 10—Lieut. W. F. Lapidge, 18th Jan. arr. at Lisbon from Falmouth.

Lightning, St. V.—J. Allen, Woolwich.

Madagascar, 46—Capt. E. Lyons, 2d April at Malta.

Magicienne, 24—Capt. J. H. Plumridge, Jan. at Madras.

Magnificent, 4—Lieut. J. Paget, Port Royal.

Magpie, *Cutter*—Lieut. J. Moffat, Sheerness.

Malabar, 74—Capt. Hon. J. Percy, 15th April at Cadiz, 18th sailed from Gibraltar for Malta.

Mastiff, 6, S. V.—Lieut. T. Graves, Archipelago.

Melville, 74—Flag of Vice-Adm. Sir John Gore, K.C.B., Capt. H. Hart, 25th Nov. Ceylon, 18th Jan. at Bombay.

Messenger, St. Transp.—Plymouth.

Meteor, St. V.—Lieut. Symons, 30th March at Marseilles.

Minx, 3—Lt. J. Russell, 10th Jan. at Jamaica.

Monkey, —Lieut.——, Feb. at Jamaica.

Nautilus, 10—Com. Rt. Hon. Lord G. Paulett, Oporto.

Nimble, 5—Lieut. J. M. Potbury, Jamaica in March.

Nimrod, 20—Com. Lord E. Russell, 5th May arr. at Portsmouth from Corunna, 10th May arr. at Plymouth. Refitting.

North Star, 28—Capt. Lord W. Paget, 24th Feb. at Barbadoes.

Ocean, 80—Flag of Vice-Adm. Sir John Poo Beresford, Bart. K.C.B., Capt. S. Chambers, Sheerness.

Onyx, 10—Lieut. A. B. Howe, Plymouth.

Orestes, 18—Com. W. N. Glascock, Oporto.

Pallas, 42—Capt. W. Walpole, 11th Feb. at Trinidad.

Pearl, 20—Com. R. Gordon, Feb. Jamaica.

Pelican, 18—Com. J. Gape, 2d April at Malta.

Pelorus, 18—Com. R. Meredith, 9th Jan. Simon's Bay.

Phœnix, St.V.—Woolwich.

Philomel, 10—Com. W. Smith, 19th March at Malaga.

Pickle, 5—Lieut. C. Bagot, Bahamas.

Pike, 12—Lt. A. Brooking, 1st May arr. at Plymouth.

Pincher, 5—Lt. J. Hookey, Feb. at Jamaica.

Pluto, St. V.—Lieut. T. R. Sulivan, Bight of Benin.

Pylades, 18—Com. E. Blankley, Rio Janeiro.

Racehorse, 18—Com. F. V. Cotton, 2d Oct. sailed for Jamaica.

Rainbow, 28—Capt. Sir J. Franklin, Knt. 28th March arr. at Malta.

Raleigh, 18—Com. A. M. Hawkins, 25th March at Salonica, April at Smyrna.

Rapid, 10—Com. C. H. Swinburne, 5th Feb. at Napoli di Romania.

Rattlesnake, 28—Capt. C. Graham, 23d Dec. sailed for Lima.

Raven, S. V. 4—Lieut. W. Arlett, Med.

Revenge, 78—Capt. D. H. Mackay, 20th May arr. at Plymouth.

Rhadamanthus, St. V.—Com. G. Evans, 20th April sailed for West Indies, *via* Lisbon.

Romney, *Troop Ship*—Mr. R. Brown, 21st March arr. at Bermuda, sailed 25th for Barbadoes, spoken 1st April in 24° N. 57° W.

Rover, 18—Com. Sir G. Young, Bart., 11th April returned to Malta.

Royalist, 10—Lieut. R. N. Williams, 7th Feb. arrived at Falmouth from Oporto.

St. Vincent, 120—Capt. H. F. Senhouse. Vigo, 18th sailed for Mediterranean.

Salamander, St. V.—Com. W. F. Austin, Sheerness.

Samarang 28—Capt. C. H. Paget, 3d Feb. at Coquimbo, about to sail for Rio.

San Josef, 110—Flag of Adm. Sir W. Hargood, Capt. G. T. Falcon, Plymouth.

Sapphire, 28—Capt. Hon. W. Trefusis, 25th Jan. sailed from Jamaica. 6th Feb. returned.

Satellite, 18—Com. R. Smart, North Sea.

Savage, 10—Lieut. R. Loney, 9th March arrived at Lisbon.

Scout, 18—Com. W. Hargood, Downs.

Scylla, 18—Com. Hon. G. Grey, 2d April at Malta, 5th April sailed for Tunis.

Seaflower, 4—Lieut., J. Morgan, 25th Feb. Sailed for Lisbon.

Serpent, 16—Com. Symonds, 18th May arrived at Falmouth.

Skipjack, 5—Lieut. W. Shortland, Bahamas.

Snake, 16—Com. W. Robertson, Downs.

Sparrow, *Cutter*—Lieut. C. W. Riley, Portsmouth Station, cruizing.

Spartiate, 74—Flag of Rear-Adm. Sir M. Seymour, Capt. R. Tait, 3d April spoken in lat. 14° S. 32° W.

Speedwell, 5—Lieut. Crooke, 4th Nov. at Barbadoes.

Speedy, *Cutter*—Lieut. J. P. Roepel, Plymouth, cruizer.

Stag, 46—Capt. N. Lockyer, 21st April sailed from Portsmouth for Downs.

Swan, 10—Lieut. J. E. Lane, North Sea.

Sylvia, 1—Lieut. T. Spark, Portsmouth Station cruizer.

Talavera, 74—Capt. E. Chetham, 2d May arr. at Plymouth.

Talbot, 28—Capt. R. Dickinson, C.B. 29th Nov. Mauritius.

Thunder, S. V.—Commander R. Owen, Chatham.

Trinculo, 18—Com. R. Booth, 31st Jan. Mauritius, 5th March Cape of Good Hope, 9th sailed, 7th April at Ascension.

Tweed, 20—Com. A. Bertram, Feb. St. Jago de Cuba.

Tyne, 28—Capt. C. Hope, 18th Dec. left Rio for Pacific.

Undaunted, 46—Capt. E. Harvey, 14th Feb. at Sierra Leone, 7th April at Ascension.

Vernon, 50—Flag of Vice-Adm. Sir G. Cockburn, K.C.B., Capt. Sir G. A. Westphal, Knt., 16th March arrived at Bermuda, sailed 27th for Jamaica.
Vestal, 26—Capt. W. Jones, (c) Sheerness.
Victor, 18—Com. R. Russell, 12th March at Barbadoes.
Victory, 104—Flag of Adm. Sir T. Williams, G.C.B., Captain C. R. Williams, Portsmouth.
Viper, 6—Lieut. H. James, Plymouth.
Volage, 28—Capt. G. B. Martin, C. B. Portsmouth.
Winchester, 52—Capt. Hon. W. Wellesley. 24th May arrived at Spithead.
Wolf, 18—Com. W. Hamley, 25th Oct. at Madras.

Paid off into Ordinary.

San Josef, 30th April, Plymouth.
Sparrowhawk, 26th April arrived at Portsmouth. Paid off 9th May.
Caledonia, 16th May, Plymouth.
Zebra, 10th May, Chatham.

Commissioned.

San Josef—Plymouth.
Vestal—Sheerness.
Phœnix—Chatham.
Forte—Plymouth.
Caledonia—Plymouth.

VARIETIES.

Rear Admiral Gage hoisted his flag in H.M.S. Donegal on the 11th ult., Sir Pulteney Malcolm having been appointed to the Mediterranean command. —*Ports. Her.*

The building of the St. George and the Nile, first-rates, is proceeding within this Dock-yard. The Nile is in a state of forwardness, and will be launched in July. The Ringdove, 16 guns, building at this Dock-yard, is in a great state of forwardness, and will be launched in June next.—*Plym. Her.*

All students discharged from the Naval College after July 1833, are, by Order in Council, to serve five years on board sea-going ships before they can be examined for Lieutenants, without reference to the time allowed them for their studies at the College, wherein they are required to remain two years.—*Plym. Her.*

By a recent Admiralty order, issued at the suggestion of the Board of Customs, all Lieutenants, who have served three years as chief officers in the coast guard service, and who are unequal to the duties, by reason of age, ill health, want of energy, or other causes, are subject to be displaced. By accounts from Plymouth, we find that the first consequence of this order is, that fourteen Lieutenants have received orders that their services will not be required at the expiration of three months.—*Ports. Her.*

H.M.S. Vestal is nearly manned, rigged, and ready for sea, although she has not been commissioned much more than a fortnight.

H.M.S. Pyramus, 35, is rapidly getting forward at Plymouth, to proceed to Halifax or Bermuda, on a similar establishment, we understand, to that of the Ceylon, which ship sailed from that port some little time since, to lie at Malta, with the flag of the Rear-Admiral Superintendant.—*Ports. Her.*

Bridport. — The trade of Bridport Harbour has been regularly on the increase since its re-construction about a century ago, and from the great extent of country to be supplied, and the well-known enterprise of the manufacturers in the town and neighbourhood, there is every prospect of its continuance. The amount of dues for the first year after its construction was under 20*l.*, whilst last year, from the 1st of January, 1832, to the 1st of January, 1833, there arrived and sailed from this port 580 vessels, containing 44,872 register tons, and paying dues amounting to 1,935*l.* 5*s.* 2*d.*! The London trade from this port is extremely well conducted, a vessel arriving from and sailing to it every five or six days; and an increased facility is obtained for conveying goods to Taunton, Sherborne, &c. by the establishment of waggons lately, conducted by the highly respectable house of Thomas Russell and Co. of Exeter. —*Hant's Adv.*

Iron Steam Boats.—(From a Correspondent.) — On Tuesday last, was launched, from the premises of Mr. Fairbairn, engineer, in Manchester, a most beautiful iron steam-boat, intended for the navigation of the canal from Ostend to Bruges in Belgium, named *La Reine des Belges.* A company has been formed in that country for the purpose of navigating its fine canals and interior rivers, at the head of which is His Majesty Leopold. This is the first boat which has been built for the purpose; she is 73 feet long, 14 broad, and rather more than 9 deep, and is intended to be sent by sea round the Land's-end; she will be propelled by a paddle, placed at the stern, in the centre, for the purpose of preventing any injury to the banks of the canal, and is well worth the attention of the English canal proprietors, indeed, of every one interested in canal navigation; which, by this means, is likely to become more valuable; similar boats, built by Mr. Fairbairn, have been successfully at work for more than two years upon some of the Scotch canals.—*Times.*

The following Midshipmen have been found duly qualified for Lieutenants at a special examination: Mr. Pridham, Vernon; Mr. Smith, Briton; Mr. Branch, late of the Crocodile; and Mr. Madden, late of the Sulphur.—*Hants.*

Steam Navigation from Hamburgh—The Hamburgh Borsen Halle List of the 1st April, contains the following information about the steam navigation between Hamburgh, Copenhagen, Kiel, Lubeck, &c. which we trust may be of service to the mercantile part of our readers.

1st.—On each Monday evening, at nine o'clock, letters for Copenhagen and Elsinore may be despatched from Hamburgh, for Lubeck, and will be forwarded on Tuesday evening, by the steam-boat from Lubeck for Copenhagen.

2d.—By the steam-boat leaving Copenhagen on Monday noon for Lubeck, letters may be forwarded for Hamburgh, which are despatched from Lubeck immediately on the arrival of the steam-boat, by means of an extraordinary letter post for Hamburgh.

3d.—By the steam-boat returning from Kiel for Copenhagen, on Saturday evening, at seven o'clock, letters may be sent from Hamburgh for Copenhagen, Stege, and the places in the vicinity of Laaland, and Falster; Nakskow, Mariboe, Rodbye, Saxkiobing, Nyestadt, Nyekiobing, and Stubbekiobing. These letters may be sent by the common post leaving Hamburgh, on Friday evening, for Rendsburg, and from thence, separated from the post going through to Copenhagen, sent to Kiel to be forwarded by the steam-boat.

In addition to the above, the steam-boat Frederick den Sjette, leaves Kiel regularly, every Saturday evening, at seven o'clock, and Travemunde every Tuesday, at six o'clock in the afternoon. The steam-boat Alexander Nikolajewitsch will commence running between Lubeck and Riga, in the course of May,—the exact day not yet announced. The steam-boats Nicola I. and the Alexandra, will commence running between Lubeck and Petersburg, and will continue to leave Lubeck on the following days, all new style, viz.:—14th, 21st, and 30th May; 6th, 18th, and 24th June; 4th, 11th, 23d, and 30th July; 8th, 15th, and 27th August; 3d, 12th, and 19th September; 1st, 8th, 17th, and 24th October.

St. Catherine's (Brazil.)—In coming round Cape Horn, on our voyage from the Pacific Ocean to London, we had not seen a sail of any description for ninety days, although we were in a fast-sailing vessel, and had experienced a tolerably good run from the Sandwich Islands to the river Plate. But after passing the mouth of this celebrated river, the winds getting light on the southern coast of Brazil, we became impatient of so many calms, being nearly out of every thing for the cabin table till one morning we were almost electrified by the welcome shout from one of the tops of "a sail in sight." As this was the ninetieth day since we had seen any thing to remind us of human beings, but ourselves, we soon ran up the rigging, to enjoy the cheering sight. It turned out to be a schooner with the Argentine flag flying, and our boat was lowered in an instant, with the mate and doctor, and about twenty or thirty dollars, to purchase a few fowls, or any other *fresh*, as the Yankees call it, to keep us in good humour till we got to Rio for general refreshment.

The schooner was at least eight miles off, and we lay to with our topsails to the mast, enjoying the sight of her, and watching for the return of our boat, speculating on what luck or news she might bring us, when, late in the afternoon, every now and then, through the spy-glass, we could just make out the motion of the oars over the gently heaving waves, and anxiously lingered near the larboard gangway for her coming alongside, to get the first intelligence from the little stranger. She had been out 17 days from Buenos Ayres, with a cargo of jerked beef for Rio de Janeiro, and having had a very long passage with little prospect of getting on, surrounded as they were with calms, all we could get from them was a couple of miserable chickens; but we were delighted at a present of Buenos Ayres newspapers in English: and the importance of their contents so astonished us, that we sat up reading them for hours after midnight. The abdication of Don Pedro—the King not going to Guildhall—King Leopold—the state of Paris—the Whig ministry—and the various extracts from the English papers (not a scrap of which we had seen in any shape or way for more than twelve months,) amply made up for the disappointment we felt in the boat returning without a fresh supply of provisions. To this also we were the more reconciled, as the captain of the schooner (who, by the bye, was an Englishman) had told our mate that we need not go to Rio to get provisions, as there was a port close under our lee called St. Catherine's, which we might reach in a couple of days, and where we should find a most abundant supply of every thing, and at extremely low prices. We gladly took the hint, and our captain, before dark, had altered the ship's course, for we were now standing right in for the land. St. Catherine's, St. Catherine's! We were all referring to our books, to get any information we could about the place, but could glean nothing except that La Perouse had refreshed there on his outward voyage of discovery, and gave the place a high character. The next night, although it was as dark as pitch, we leaded it all the way in between the lofty shores, till our sounding came to 5; and the joyful sound of the anchor and chain running out of the hawse, made us feel quite in a novel situation after so long a run. We had all day, when the land was indistinct, had the butterflies coming off to us, and lighting on our spars and rigging; and we had caught a little bird that was not nimble enough for our tamaré, a native Sandwich Island boy, who caught it while resting on the boom end. The fragrance of the air at ten miles off the shore, as we approached the harbour, was acknowledged by all on deck, and the spy-glass was in constant use ever since the first tint of the land had been discerned from the maintopmast head, and our old acquaintances, the cocoa-nut trees, we more than welcomed after the cheerless regions and snow-capt mountains of Terra del Fuego, and Cape Horn.

As we lay quiet at anchor, we would have willingly kept in bed next morning, but the wakeful excitement of the night, and the desire of seeing where we were, brought us all on deck at peep of day. It was a noble sight. Beautiful St. Catherine's! The same good taste which so distinguishes the Portuguese in Europe for their convents and churches, their quintas and country houses, their Cintras, their Mafras, and Beneficas, is displayed in this almost unknown spot; and the harbour of St. Catherine's, for extent, grandeur, and picturesque beauty, may vie with any scene in Europe. It was a perfect panorama. The land which we thought, the night before, when we dropped anchor, to be almost touching our jib-boom, was now by day-light three miles off on every side, and we were riding at anchor safely moored in the middle of one of the finest basins of the world, the climate bland, and exhibiting in the height of summer, 21st of December, and the luxurious evergreens around us, one vast and continued grove of coffee, orange, and bananas. Magnificent Brazil! that can, in such a remote spot as St. Catherine's, (the Desterro, or Botany Bay, of Portugal,) exhibit all the features of the sublime and beautiful—the useful and agreeable. I resolved to go ashore in the first boat, of which several were now coming off, at sun-rise, to offer us their eggs and poultry, fresh bread and onions. After a capital breakfast, we were visited by the captain of the port, who lives at Santa Cruz, an old gentleman, apparently of the *ancien regime*, with unwashed, unshaven face, but with a plentiful dash of gold lace and military accoutrements. He talked a little English, told us the city was ten miles up the water, and gave us the names of the principal merchants, whom we resolved to visit after dinner, as soon as we had enjoyed a run among the hills. The town of St. Catherine's is regularly built, at right angles along the water side, having a large square in the centre, with the principal church for one side, and the house of the president, the custom-house, and other public offices, for the remaining two sides. It carries on a considerable trade with Santos and Rio: to which ports it ships whole cargoes of onions, with the farinha of the mandiocre, and a little coffee. But the latitude of 27 degrees being rather too cold and uncertain for this latter article, the crops are not to be depended on; the southerly winds cutting them all off sometimes in a single night.

The shops are mostly supplied from Baltimore and Boston, in pretty little brigs of 120 tons or thereabouts, which, with a skill and perseverance peculiar to the Americans—half captains and half merchants—manage to carry on a very thriving trade: calling to dispose of their butter, cheese, hams, lard, cordage, oil, hats, iron, calicoes, prints, &c. before running down to Rio Grande and Porto Alegre for their cargoes of hides and horns.

The harbour of this beautiful little island of St. Catherine's is formed by the strait which separates it from the great continent of South America which is not a quarter of a mile wide opposite the wharf, affording the grandest views of mountains and cataracts from every window in the town. About twenty vessels were at anchor, none drawing more than eight or nine feet; the larger ships being compelled to stop down below at Santa Cruz, nine or ten miles off, where the harbour is extremely wide, and a good deal of sea pitches in.

Mr. Fox, our envoy at Buenos Ayres, had recently visited St. Catherine's as well as Lord Colchester, in the Volage; and the good people of the island had a strong expectation that the English government were going to take possession of the island by treaty with Brazil. I suppose "their wish was father to the thought;" but the king's ministers might do worse, as it would form a capital naval rendezvous, and a most convenient spot for the increase of our Brazilian trade. The country abounds with fine timber, is a delightful climate, and would soon, in such an event, be stocked with English merchants and residents, as it is justly called the Montpelier of Brazil.

My stay during the Christmas week at this pretty place, was made very agreeable by the polite attentions and incessant hospitalities of the Russian and English vice consuls, Messrs. Trompousky and Ricken, as well as the American vice-consul, and many of their private family friends among the Brazilians. There is no inn or tavern in all Desterro; a fact of itself, in a population of 7 or 8000 inhabitants, which sufficiently proves their hospitable character, as well as the paucity of strangers who come to visit them; but a prettier or more eligible residence for persons of taste and small income could hardly be selected than this island of St. Catherine's; and were it in 27° north latitude, instead of 27° south, it would be the fashion for Englishmen to go and visit it by shoals, and steam boats would get constant employment for the conveyance of invalids.

As a place of refreshment for ships going to the south round the East Cape,* it is perhaps rather objectionable, being so far to the westward; but for ships returning from the Pacific in the winter months, especially those who find themselves in want of supplies, none can be better; and for whalers and other vessels bound to Chili, Peru, California, or the Sandwich or South Sea Islands, I would recommend them by all means to look in at St. Catherine's.

* Cape of Good Hope.

The whole port-charges on a ship of 300 tons do not exceed 30s., and there are no dangers of any kind, as you may go in, as we did, in the darkest night, if you keep your lead going; and there is a sea-breeze every morning, to carry you well out, off the land. The entrance is also so remarkable between the two bold islands of Gale and Arvoredo, that you can hardly go past the port, although you have neither chart nor directions. The market is well supplied with fish, meat, vegetables, and fruit, all of which, with poultry and eggs, are very good and reasonable.

The north point of St. Catherine's is in lat. 27. 24 S., long. 48. 24 W., and the entrance of the harbour about six miles wide between the island and the main. Yours, T. H. J.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Commanders—J. Roberts, *Ret.*; Lord F. C. P. Beauclerc; M. Foot; T. Ross.

Lieutenants—F. B. Hankey; S. Grenfell; R. Harris; E. G. Maude.

APPOINTMENTS.

Admiral of the Fleet—C. Nugent. *Vice-Adm.*—Sir P. Malcolm, K. C. B., Mediterranean. *Flag-Lieut.*—R. Morgan. *Rear-Admiral*—W. H. Gage, North Sea Squadron. *Sec.*—J. Pinhorn.

BADGER, *Rev. Cr.—Lieut.-Com.* W. Becket, (*b*).

BELVIDERA, 42—*Lieut.* F. B. Hankey.

BRITANNIA, 120—*Lieuts.* J. Fulford; W. T. Griffiths; H. W. Johnstone; R. Morgan.

CALEDONIA, 120—*Capt.* T. Brown; *Lieuts.* T. B. Brown, J. Lunn, T. Mathias, A. T. Tracy; *Mast.* T. Peyton; *Purser*, R. Goldie; *Chaplain*, Rev. H. Salvin.

CASTOR, 36—*Assist. Surg.* J. Lowry, (*b*); *2d Mast.* J. Mitchell.

CONFIANCE, St. V.—*Lieut.* J. M. Waugh; *Assist. Surg.* T. Brenan.

CURLEW, 10—*Act. Lieut.* Mr. Watson.

DEE, St. V.—*Assist. Surg.* H. D. Shea.

DONEGAL, 78—*Lieut.* J. E. Bingham.

FORTE, 44—*Capt.* W. O. Pell; *Com.* W. Herringham; *Lieuts.* H. Eyres, R. A. Bradshaw, E. F. Wells; *Master*, J. Thomas; *Sec. Lieut Mar.* G. Hollingworth; *Surg.* T. Clark; *Assist. Surgs.* J. Dunn, J. Morrison; *Chaplain*, Rev. J. Marshall.

FORTE—*Master's Mate*, G. W. Masters; *Purser*, R. Goodridge.

INVINCIBLE, 74—*Gunner*, R. Henley.

LARNE, 18—*Lieuts.* P. Orlebar, H. Bingham; *Master*, J. Hales; *Boatsw.* J. Stubbington.

MAGICIENNE, 24—*2d Lieut. Mar.* E. A. Parker.

MAITLAND, *Transport—Lieut. Com.* S. Spencer.

MARY, *Rev. Cutter—Lieut. Com.* W. R. Brooman.

MELVILLE, 74—*Mate*, Mr. Daniell; *Clerk*, W. Dutton.

NELSON, 120—*Gunner*, Mr. Sheppard.

NEVA, *Conv. ship—Surg.* M. Price.

OCEAN, 80—*Capt. Mar.* J. Humby; *Surg.* J. S. Swaine.

ORDINARY—*Portsm.*, *Lieut.* R. Dwyer; *Plymouth*, *Purser*, A. Murray; *Boatswain*, J. Smithers; *Chatham*, *Surg.* W. Clarke, (*a*); *Carpenter*, J. Rogers; *Sheerness*, *Com.* R. Lowthian.

PHŒNIX, St. V.—*Lieuts.* G. W. Smith, E. Owen; *Master*, J. Tucker; *Surg.* A. Neill; *Assist. Surg.* J. Clarke; *Purser*, A. Sugden.

ROYAL ADELAIDE, *Conv. ship*—A. Anderson.

ROYAL WILLIAM—*Gunner*, Mr. Treliving.

SAN JOSEF, 110—*Capt.* G. F. Falcon; *Lieuts.* R. A. Bradshaw, M. C. Foster; *Flag Lieut.* R. Yorke; *Master* W. Scott; *Purser* R. Brown; *Surg.* J. Allen; *Chaplains* Rev. W. Payne, Rev. C. H. Lethbridge; *Assist. Surg.* M. Doyle, W. M'Auley, J. Watson; *Clerks* F. Poad, R. F. Stokes. *2d Lieuts. Mar.* H. D. Erskine, T. R. Jackson.

SEMAPHORE—*Lieut.* Barnacle Hill; B. Leary,

SNAKE, 16—*Act. Master*, M. Wood.

SKATESBY, *Conv. Ship—Surg.* D. Thompson.

SPARROW, *Cutter—Clerk* G. Doubt.

SYLVIA, *Cutter—Lieut.* Henderson.

TALAVERA, 74—*Capt.* E. Chetham, C.B.; *Mate* W. Dickson.

THUNDER, *Surv. Ves.—Surg.* T. Johnstone.

THUNDERER, *Ord.—Assist. Surg.* J. Osborne, (*b*.)

TWEED, 20—*Lieut.* C. H. M. Buckle.

VERNON, 52—*Lieuts.* G. Byng, C. J. Bosanquet; *Clerk*, G. Snow.

VESTAL, 26—*Capt.* W. Jones (*c*); *Lieuts.* E. Wilson, R. W. Otway, J. M. C. Symonds; *Mast.* J. Yule; *Surg.* G. Williams; *Assist. Surg.* W. Doak; *Purser* J. T. Glendow; *2d Lieut. Mar.* H. F. Murton; *Gunner*, M. Gallaghan.

VICTORY, 104—*Surg.* S. Livesay, M.D.; *Assist. Surgs.* J. Robertson, (*a*,) F. Mansell, J. M. Brown.

VOLAGE, 28—*Lieuts.* J. A. Legard, H. W. Giffard; *Master* G. Daws; *Surg.* F. Crellin; *Purser* H. Corbyn; *Assist. Surgeon* J. M. Le Grand; *Sec. Master* W. J. W. Burney; *Mate*, C. Hayes; *2d Lieut. Mar.* T. C. C. Moore; *Mid.* C. Feaver; *Clerk*, W. Thomas; *Carpr.* Mr. Brown.

WINCHESTER, 52—*Lieut.* G. Kennedy.

COAST GUARD—*Lieuts.* T. A. Gilson, A. Miller, J. H. Nicoll, W. Prouse, J. Jeayes, P. Broke.

CHEQUE, *Plymouth — Carpr.* T. Johns; *Gunner*, J. Vesey.

CHAPLAINS—*Thorneyburne Rectory*, Rev. J. Littlehood.

ROYAL MARINES.—Chatham, *Pay Capt.* T. Hurdle. Plymouth, *Capt.* J. H. Coryton. Woolwich, 1*st Lieut.* W. Hutton. Portsmouth, *2d Lieut.* T. Fraser.

NEW MERCHANT VESSELS. FROM LLOYD'S REGISTER FOR 1833.

Reported to 20th May.

VESSELS.	RIG.	WHERE BUILT	TONS.
Anaxahia	Schooner	Plymouth	154
Aquilla	Schooner	Aberystwith	65
Betsey Hall	Schooner	Liverpool	156
Boyne	Snow	Newcastle	240
Cape Breton, steamer	Schooner	River	204
David Whitton	Snow	Sunderland	271
Ellen	Brig	Sunderland	194
Elizabeth Taylorson	Snow	Sunderland	245
Glenconner	Schooner	Inverkething	68
Hamilton	Snow	Sunderland	247
Isis	Schooner	Wells	84
James Dunn	Schooner	Mevagissey	108
Jane & Maria	Schooner	Hull	81
Java	Barque	Sunderland	411
Jumna	Ship	Whitehaven	364
Mary Sharp	Barque	Greenock	328
Pearl	Ship	Belfast	393
Permingham	Barque	Belfast	259
Snow Drop	Schooner	Fowey	117
Vectis	Brig	Isle of Wight	206
Union	Schooner	Greenock	99
Warringford	Brig	Belfast	214

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1833.

Continued from page 302.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
314 Alexander	—	S. Leone	—	—	March	Crew saved.
315 Anacreon	White	Liverpool	Virginia	Hog Island	4 April	Crew, &c. saved.
316 Anna	Cadegan	Sidney	Ireland	Severn	25 April	Crew saved.
317 Bolina	of	Bideford	—	St Davids Hd.	—	
318 Eagle	Wilson	Liverpool	Newfndld.	Carnarvon Bay	4 May	Crew saved.
319 Ebenezer	Bartlett	Newfndld.	Pernbuco.	C. St. Rogue	March	
320 Fanny	Higton	Liverpool	S. Leone	I. Mayo	30 Jan.	Crew saved.
321 Fletcher	Scott	Liverpool	N. Orleans	On a rock	27 Feb.	Crew saved.
322 Friendship	Morice	Aberdeen	Riga	Thisted	22 April	Crew, &c. saved.
323 Helen Gray	Malaena	Jamaica	London	LittleCookR.	19 Mar.	Crew saved.
324 Hibernia	Brand	Liverpool	Australia	5 S. 21 W.	5 Feb.	By Fire.
325 Jane	of	Cardigan	uncertain.			
326 Jas. Sibbald	Darby	Bengal	London	OffCoringaP.	29 Dec.	On Shore.
327 Margaret	—	Cardiff	Preston	Carnarvon B.	26 April	Crew saved.
328 Margaret	Carlyle	Trinidad	Liverpool	Not heard of	since	17 Jan.
329 Maria	Mosey	Plymouth	St. John's	Trepassey	21 Mar.	Crew saved.
330 Mara	—	Tampico	Mobile	At Sea	—	Foundered.
331 Mary	Morris	Demerara	Dublin	Crookhaven	1 May	Seven of crew drowned.
332 Mary & Wemyss	Murray	Wilmigton.	W. Indies	G. Florida	9 Feb.	Crew saved.
333 Neptune	Hebden	Harwich	Whitby	Whitby	19 April	
334 Olinda	—	Liverpool	StAndr. N B	At Sea	21 Mar.	Crew saved.
335 Providence	—	—	Bombay	Scilly	6 May	Sunk.
336 Thomas & Eleanor	—	—	—	Near Scowrie	1 May	During a gale.
337 Union	of	Newfndld.	—	—	29 Mar.	Crew four saved.
338 Unknown	a brig	—	—	Off Skerries	17 April	
339 Venus	Parker	Berbice	Loudon	At Sea	20 Feb.	Abandoned.
340 William Black	Darley	Cadiz	Dublin	Not heard of	since	2 Feb.

FURTHER PARTICULARS OF WRECKS.

Unknown, No. 338.—This brig was seen to go down between the Cole rock and the Skerries. Some wreck, and several pieces of African stowage chocks, and one of them marked "Palm Oil," have been washed on shore at Holy-Head.

Neptune, Hebden.—Struck on an anchor in entering Whitby Harbour.

Alexander.—It appears that this vessel had sailed from Sierra Leone about the 3d of March, and was abandoned by the crew, who were picked up in the long boat, returning to Sierra Leone, by the Bernard, Wells, master.

Fletcher, Scott.—Struck on a sunken rock in lat. 21, long. 70, and in an hour and a half had 4½ feet water in her hold. The next day she went down head-foremost. The master, second mate, and four of the crew, arrived at Cape Hayti 2d March. The long boat, with the chief mate and remainder of the crew, had not then arrived. It was supposed they had steered for Jamaica.

Jane of Cardigan.—Part of the stern of a vessel, with this name painted on it in yellow, was picked up on 20th April, off Lundy.

Bolina.—We do not find this vessel's name in our tables. She appears to have been a brig belonging to Bideford, and was lately stranded off St. David's Head. All the iron belonging to her is saved.

Mary and Wemyss.—Capsized in a squall on the edge of the Gulf stream.

Maria, Mosey.—Driven on shore by the ice near Trepassey Bay. Out 65 days. Part of cargo saved.

Fanny, Higton.—Wreck sold up to the 10th Feb.

Hibernia, Brend.—On her way to New South Wales from Liverpool caught fire, and only a small quantity of provisions could be got into the boats, into which about 80 people crowded, out of 232. After enduring great privation, they were picked up by the Lotus and Isabella. The master, first and second mate, 9 seamen, and 64 passengers saved.

Mars.—The master and two seamen picked up by the Henry, Tallman.

Eagle, Wilson.—Ran on shore during a fog. Had lost her mainmast at sea, and bore up.

Olinda.—Fallen in with in lat. 35 N. long. 50 W. Seven feet water in her hold.

James Sibbald.—Accounts have been received of her total loss. The crew and passengers were saved, but the cargo, consisting of 350 tons of sugar and 1500 chests of indigo, was lost. Cargo valued at £60,000.—*Ports. Herald.*

VESSELS DETAINED BY ACCIDENTS, &c.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE DETAINED.	WHEN.	PARTICULARS.
Asia	Ward	London	Quebec	Galway	4 May	Leaky.
Elizabeth	—	Bengal	England	Mauritius	25 Jan.	Damaged.
Fox	Kelly	Newfndld.	Halifax	Fayal	3 April	Damaged.
Luna	Collinson	Sier. Leone	London	Sierra Leone	8 April	Been aground.
Michael	—	Tobago	London	St. Georges	7 April	Been aground.
Minstrel Boy	M'Bride	Demerara	StJohn.N B	Cape Split	8 Mar.	On shore.
Nelson	Daviot	Ceylon	C. G. Hope	Mauritius	14 May	Damaged.
Sophia	Pearson	Memel	—	Eartholms	11 May	Damaged.

VESSELS SPOKEN AT SEA.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE SPOKEN. ° °	WHEN	PARTICULARS.
Ann	—	Liverpool	Havana	28 N 23 W	22 Mar.	
Ann	—	Liverpool	La Guayra	38 N 15 W	22April	
Ann M'Kenzie	Gill	Liverpool	Jamaica	44 N 13 W	22April	
California	—	London	Jamaica	28 N 34 W	20 Mar.	
Caroline	—	Newport	Philadelph.	47 N 28 W	31April	Lost M. topmast.
Charles Henry	Wilcutt	Liverpool	Havana	47 N 17 W	7 May	
Hallyards	—	Clyde	Demerara	22 N 35 W	12April	
Herefordshire	Locke	—	China	Equator 22W.	2 May	
Integrity	—	Liverpool	Trinidad	24 N 29 W	22April	
John Jay	—	Liverpool	New York	47 N 30 W	26April	
Juno	—	Guernsey	Newfndld.	51 N 19 W	27April	
Mary	—	Of Scarbro'	—	15 N 91 E	25 Oct.	Dismasted, relief gn
Minx	—	Liverpool	La Guayra	51 N 13 W	3 May	
St. Vincent	Young	London	St. Vincent	22 N 31 W	23April	
Salus	—	London	C. G. Hope	9 S 28 W	20 Feb.	
Thames	Pidding	London	China	1 N 20 W	18April	
Thorney Castle	—	Sunderland	Boston	44 N 35 W	28April	
Welcome	—	Greenock	Bengal	10 S 26 W	19 Feb.	

Ship Launch. — Last month, was launched from the yard of H. Smith, Esq. at Gainsborough, a fine ship of 418 tons register, intended for the India trade, called the Asia, the property of Messrs. John Beadle and Co. and Messrs. Holderness and Chilton.—*Hull Packet.*

A remarkably fine ship, 314 tons register, with a figure head (Unicorn) and quarter galleries, named the Blakeley, was, on a late occasion, launched from the ship-yard of Mr. Edward Gibson, in the Groves. She is the property of Messrs. Taylor, Potter, and Co., merchants of Liverpool.—*Hull P.*

ADMIRALTY ORDER.

Memorandum.

"*Admiralty, 4th May*, 1833.

"The Lords Commissioners of the Admiralty having determined, with a view to the comfort of the seamen, when in ill-health, that a '*Sick Mess*' shall be instituted on board his Majesty's ships, it is their Lordships' direction that the following regulations be observed for this purpose:—

"1. When a Patient is entered on the sick list, his provisions are to be checked by a note from the Surgeon to the Purser, and the patient is then to be victualled by the Surgeon on such diet as he may consider most proper, following up the annexed scheme of full, half, and low diet, as in the hospitals, so far as the relative circumstances will admit.

"2. The Surgeon is to draw from the Purser such articles of diet as he may require from that officer, and the Purser, at the end of each quarter, is to pay over to the Surgeon the balance of the stoppages of diet, at the savings' prices, including the amount in the usual list of savings; and the amount so paid to the Surgeon is to be laid out by him in the purchase of stock and such extra articles of diet as may be necessary for the recovery of the patients, care being taken that this expenditure be limited to the amount of such savings or short issues.

"3. The Surgeon is to render a quarterly account current to the Captain, shewing the particulars of his receipts and disbursements for this service, accompanied by regular vouchers for his payments; the said account is to be checked and countersigned by the Purser, and the balance is to be carried on by him to his next account, or paid over to his successor; but when a ship is paid off, the balance is in that case to be refunded to the Purser, in order to the same being paid as savings to the men whose provisions may have been stopped, if still on board, otherwise to remain debited on his account current.

"4. In ships of the 5th rate and upwards a man of good character is to be selected from the complement and rated as '*Sick Berth Attendant*,' whose duty it will be to attend exclusively on the sick, without being called away by the ordinary duties of the ship, and who is to be paid as an able seaman.

"The Surgeons are particularly to observe, with reference to the preceding regulation, that no extra issue of tea, sugar, or other articles of necessaries in the scale, will be allowed, unless under particular circumstances, of which an explanation is to be transmitted with their accounts.

"By Command of their Lordships,
"George Elliot.

"To all Captains, Commanders, Commanding Officers, Surgeons, and Pursers of His Majesty's Ships and Vessels."

A Scheme of Diet proposed for the Sick on board His Majesty's Ships, (daily,) viz.

	Full Diet.	Half Diet.	Low Diet.
Soft Bread (when procurable) . . . . lbs.	1	¾	½
Beef . . . . . . lbs.	1	½	—
Vegetables (when procurable) . . . . lbs.	1	½	—
Broth . . . . pints	1	1	½
Barley for ditto, drachms	12	12	12
Or Rice for ditto, in lieu of Barley . drachms	10	10	10
Pot Herbs for ditto (when procurable) . . oz.	1½	1½	1½
Salt . . . . . oz.	½	½	½
Vinegar . . . . oz.	1	1	—
Tea . . . drachms	3	3	3
Sugar . . . drachms	14	14	14
Milk (when procurable) pt.	⅓	⅓	1
Wine	at discretion of Surg.		
Cocoa (as a substitute for Tea) . . . . oz.	1	1	1

N.B.—The preserved meats and other articles in the scale of medical necessaries are to form part of the Diet for the sick, as heretofore.

MOVEMENTS OF TRANSPORTS.

Amphitrite—Lieut. W. R. Cooley, 25th May arrived at Portsmouth, on her way to the river.

Arab—Lieut. W. C. Harris, 17th Nov. sailed from Mauritius for Ceylon.

Flora—Lieut. Wesley, Portsmouth.

Hope—Lieut. W. Ryder, Oporto.

Maitland—Lieut. Sanders, 13th May arrived at Deptford.

Marquis Huntley—Portsmouth.

Numa—Lieut. W. T. Woodman, 27th March sailed from Cork.

Orestes—Thames.

Prince Regent—Lieut. C. H. Binstead, Mediterranean.

Stentor—Lieut. E. B. Davison, Deptford.

Sylvia—Deptford.

Wanderer—Lieut. A. Young, West Indies.

Births.

May 11, in Ireland, the lady of Capt. W. Mudge, R.N. of a daughter.

At Richings-lodge, the lady of Capt. Tyler, R.N. Lieut.-Governor of St. Vincent's, of a daughter.

On the 14th inst. the lady of James Hall, Esq. surgeon, R.N. of a daughter.

At Earl's-terrace, Kensington, on the 27th April, the lady of Dr. Charles Inches, of a son.

On the 28th April, at Portsea, the lady of Captain Moresby, India Navy, of a son.

At Fareham, the lady of Commander Silver, of a daughter, still-born.

At Bideford, the lady of Lieutenant Jackson, R.N. of a son.

At Bodmin, on Tuesday, the lady of Lieut. Liddell, R.N. of a son.

In Trafalgar-place, Stoke, the wife of Mr. T. Shanks, Purser, R.N., of a son.

At Devon Cottage, the Lady of Lieut. Brouncker, R.N. of a son.

Marriages.

On the 15th May, at Tenby, Captain Francis Brace, R.N. to Elizabeth, daughter of John Middleton, Esq. of Clifton.

Mr. Chartres, Assistant Surgeon H. M. S. Conway, to Elizabeth, the third daughter of Captain Herriott, R.M.

On the 2d May, at Ash, Kent, by the Rev. G. R. Gleig, M.A., John Winter Hope, Esq., R.N., to Sarah, youngest daughter of the late John Newman, Esq.

At Littleham, by the Rev. Joseph Gattey, Lieutenant Isaac Burch, R. N. to Mary, daughter of the late C. H. Jarvois, Esq.

Captain Henry Conn, R.N. of Trennick, near Truro, to Miss Newport.

At Littleham Church, Lieut. Pitman, R.N. aged 72, to Miss Anne, aged 23 years, daughter of Mr. William Abraham, landing-waiter at the port of Liverpool, late of Exmouth.

Lately, at Stoke Church, by the Rev. W. J. St. Aubyn, L. Gillies, Esq. R.N. to Mrs. Cunningham, of George-street, Devonport.

Deaths.

At his residence in Wimpole-street, Cavendish-square, in the 70th year of his age, Sir Christopher Robinson, the Judge of the Admiralty Court. He had sat in the Admiralty Court in the first session of the present term, and appeared in his usual health and spirits.

Suddenly, on the 7th May, Mr. John Jeanes, late Master's Assistant of H.M. ship San Joseph, son of Lieut. Jeanes, Royal Naval Hospital, aged 29.

On the 3d May, Mr. Alex. Smellie, Purser R.N. late of the Forte.

At SouthwellHouse, Plymouth, Dr.Hughes, R.N.

At Torpoint, Lieut. James Allen, (1798) aged 68.

At Devonport, Sidney Swiney, Esq. one of the elder Pursers of the Royal Navy, after a protracted illness.

Lieut. W. H. Whinfields, R.N. aged 35.

At Canton, on the 28th November last, Lieut. J. W. Phillips, R.N. Captain of the private ship Elizabeth.

At Bath, Captain Henry Montresor, Royal Navy, C.B. deeply lamented by his family and friends.

At Penrith, on the 16th May, in consequence of a severe accident, Captain William Buchannan, R.N.

At Mile-End Terrace, on the 6th May, John Engledue, Esq. Master, R.N. in his 60th year, regretted by a large circle of friends.

On the 20th May, Henry Widdrington Whinfields, Esq. Lieutenant Royal Navy, in the 36th year of his age, fourth son of the late Rev. Wm. Whinfields, Vicar of Ramsey and Dovercourt-cum-Harwich, in the county of Essex.

At Deptford, Lieut. Augustus Markett, R.N. (1780), aged 72, Master Warden at that Dock-yard.

At Deptford, aged 90, Mr. James Wallis, Carpenter in the Navy, who accompanied Captain Cook in his second voyage of Discovery round the world.

On the 24th May, at the Thames Police-office, deservedly and sincerely regretted, Captain Thomas Richbell, R.N., one of the magistrates of the Thames police, in the 71st year of his age.

We regret to have to record a fatal accident which occurred on the 10th of April last, at Malta, and by which First Lieutenant R. Ogden, of the Royal Marines, attached to H.M.S. Belvidera, and Lieut. G. M. Garrett, R.N. of the same ship, (son of the worthy Superintendent of Haslar Hospital) met a watery grave. This melancholy event is thus related in a letter from Malta, dated April 24th:—"I regret to tell you, that on the morning of the 10th inst. a party, consisting of Lieut. the Right Hon. Lord Clarence E. Paget, (of the St. Vincent), Lieut. George M. Garrett, of the Belvidera, and First Lieutenant Robert Ogden and Second Lieutenant J. H. Gascoyne, both of the Royal Marines of that ship, left their ship on a shooting excursion. There was not much wind, but a great swell. In attempting to land in a heavy surf, the boat upset. Ogden, being a good swimmer, endeavoured to reach the shore, but the surf was too strong for him, and, after struggling for some time, sunk to rise no more. Garrett had the shot-belt round him, with a considerable weight of shot, and he went down immediately. The rest were saved by holding on to the boat until assistance arrived."—*Portsmouth Herald.*

At Sheerness, J. Gooch, Esq. Surgeon of his Majesty's ship Ocean, flag-ship at that port. As a public officer he was an honour to the service, and in his individual capacity he was highly respected and esteemed.

Lieut. C. H. Bowen, R.N. being the fifth brother who was either killed or died in his Majesty's service. He died universally regretted.

The following extract of a letter from an officer of H.M.S. Belvidera, dated Malta, April 24th, gives some few interesting particulars of the death of Sir Henry Hotham: "For several days, Sir Henry had been attending as President of the Admiralty Court, and on the 17th, he had occasion to make a very long speech, which greatly exhausted him, and he retired from the Court suffering from a violent head-ache. The symptoms were not, however, considered of a serious nature, nor indeed was any danger apprehended till the moment of his death. The medical man, who attended him, had left a draught for the Admiral, to be taken on the 19th, at eleven P.M. Sir Henry awoke a little before that time, and complained to Lady Frances Hotham of a most dreadful pain in his head. Lady Hotham immediately gave him the draught, which Sir Henry had scarcely lifted to his lips, when falling back with a gurgling noise in his throat, he instantly expired. He will be buried on the 24th with military honours." —*Portsmouth Herald.*

On the 16th May, at Dalby-terrace, City-road, aged 39, Mr. Thomas Thompson, master, R.N.

On the 3d May, at 14, Charlotte-street, Leith, Mr. Alexander Smillie, Purser, late of the Forte.

Dr. H. Hughes, Surgeon, R.N. deeply and deservedly lamented.

LONDON: FISHER, SON, AND CO. PRINTERS, NEWGATE-STREET.

THE

NAUTICAL MAGAZINE,

&c.

JULY, 1833.

HYDROGRAPHY.

Note.—All bearings are Magnetic, unless otherwise stated.

43.—Wallis Island, Pacific Ocean. Lat. 13° 22′ S. Long. 176° 4′ W.

The celebrated circumnavigator Captain Samuel Wallis, in H.M.S. Dolphin, discovered the island which is known by his name on the 16th of August, 1767, in the course of his voyage round the world. An event which occurred there last year, and which is alluded to in another page of this number of our work, was the occasion of a visit to this island by H.M.S. Zebra, under the command of Acting-Commander G. M'Murdo, R.N. Mr. David Duncan, the master of the Zebra, has made the following remarks on the island for the information of navigators:

Wallis Island consists of one large island, surrounded by several small ones, the whole being encircled by a reef which has only one opening in it. This opening, which is on the south side of the reef, is a channel about 60 fathoms broad and a quarter of a mile long, through which there is generally a strong current running, which is very dangerous to ships. The entrance should never be attempted except at high or low water, and then only with a free wind. The position of the entrance may be known by a small sandy island, covered with cocoa-nut trees, which is on the starboard hand going in. And a small insulated rock which makes like a boat under sail, readily seen from outside the reef, may serve also to point it out. The course through the entrance is N.N.E., and vessels going in should take care to keep the above-mentioned sandy island on their starboard hand close on board. A vessel having cleared the entrance may work up into the lagoon, taking care to avoid the detached reefs which lie in her way, by keeping a good look-out for them. H.M.S. Zebra worked up about seven miles, and anchored in twenty fathoms, off the king's village.

It is high-water at full and change at 5 P.M.; and the rise of tide is about five feet.

The foregoing may be useful to some of our navigators, and the annexed elegant little sketch, made by Mr. T. C. T. Maxfield, master's-assistant of the Zebra, at the period of her visit, will serve to render it still more so, and at the same time assist us in describing it to our readers. The small island at the entrance is called Etua, or God's Island. The island immediately above the entrance is Minini Island. The island beyond the isolated rock is called Litte Oware, and, being the largest island of the group, is the residence of the king.

44.—The Cuidado Reef, *West Indies, said to be South of I. Mariguana.*

The following is an extract from the notes of Commander R. Owen, in H.M.S. Blossom :

Stood to the southward, in search of Cuidado reef. Observed at noon, in lat. 21° 57′ N., long. chronometer 73° 5′ W. Continued to beat to the eastward all the afternoon, and, at sunset, not having observed any appearance of soundings, we bore up for the west end of Mariguana, which we passed at 11 P.M., and shaped a course for the Flat Cays, N.W. by N. We have now been four several times across the space, within which the Cuidado is said to exist, without having seen any appearance of shoal water. And from the report of several wreckers, (some of which have been backwards and forwards in this immediate neighbourhood for upwards of twenty years,) I have every reason to doubt its existence, for they not only have never seen any thing like soundings, but never saw nor heard of any one that did, except Mr. De Mayne; and it is altogether incredible that such a danger could exist without their knowledge.

It is said to lie in the line between the west end of Little Inagua and the east end of Mariguana : we have crossed that meridian in four different parallels, viz. 21° 57′, 21° 42′, 21° 48′, and 22° 4′.

No direct mention is made of the reef in the Spanish "Derrotero," and Mr. De Mayne is only said to have "seen it in passing !!" I have therefore rejected it. I have searched in vain for the authority upon which it was first inserted, although, from its name, I was led to suppose I should find it in the "Derrotero de las Antillas." "Igualmente al S. de Mariguana se ha situado ortro placer *muy poco hace descubierto*, y no será extrano que la frequencia de navegantes en estos parages descubra nuevos peligros, que aunque existan estan hasta ahora desconocidos." Vide Derrotero, &c. Madrid, 1810, page 157.

The vague assertion by the Derrotero, that it is to the southward of Mariguana, and very lately discovered, might have been founded on the report of Mr. De Mayne.

45.—Esprit Reef, *West Indies, between Martinique and Barbadoes. Lat.* 14° 28′ *N., Long.* 58° 57′ *W. Least Water yet found,* 7 *fathoms.*

Mr. Purdy, in his valuable "Atlantic Memoir," gives the following account of the first discovery of this danger :

"On the 4th of July, 1817, the French ship St. Esprit, bound from Marseille to Martinique, in lat. 14° 37′ N., long.* 64° 18′ W., 35 leagues distant from the island, fell in with a chain of rocks, about 8 feet under water, extending about 500 fathoms from north to south, and being about 100 fathoms broad, and were plainly seen on the bottom from the vessel. According to a sketch given of the reef by the captain, it lies somewhat in the form of a half-moon; and the ship running westwardly, with a strong wind, got within its horns, and narrowly escaped being wrecked, but made her way out by the south point. The reef, it seems, from its situation, must have been of recent formation, as it is in the track of vessels bound to Martinique, and is not known to have been before observed."

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* From the meridian of Marseille.

Other dangers also, in the parallel of Martinique, are mentioned as having been seen, but we are inclined to think, that, as we are bound to make large allowances for erroneous reckoning, the shoals, if seen at all, were the Esprit.

We have now a satisfactory confirmation of the existence of the Esprit; and if the position assigned to it in the "Memoir" be correct, it is an extensive and dangerous one, and should therefore be carefully avoided by ships. His Majesty's ship North Star, on the 11th of February last, while on her way from Antigua to Demerara, under the command of Captain Lord William Paget, struck soundings in 7 fathoms water in the latitude and longitude as stated at the commencement of this notice. The North Star was in company with the Arachne, Columbine, and Duke of York, and had on board the right wing of the 86th regiment.

On the shoal water being discovered, the helm was immediately put down, and the North Star ran N. ½ W. half a mile; at the same time making signals to the other ships of the danger. As it was night, and a fresh wind blowing, the ships, after running the above course, hove to the wind for daylight. They then spread, and searched for the shoal, without success, after which they proceeded on their voyage. But it is most satisfactory to observe, that, in consequence of the approach of the ship to a *supposed* shoal, the hand-lead was kept going all night, in its vicinity, from 8 P.M. of the 10th, until daylight of the 11th, by which precaution the extent of this shoal was discovered.

It is without hesitation, therefore, that, on the foregoing valuable information, we caution vessels to beware of dangers yet undiscovered, between the limits of 14° 28′ and 14° 37′ N., near the meridian of 59° W.

46.—BANK OF SOUNDINGS OFF THE WEST END OF THE GRAND CAYMAN. *Lat.* 19° 17′ N., *Long.* 81° 56′ W. *Least Water yet found*, 17 *fathoms.*

Lieut. E. Bagot, commanding H.M.S. Pickle, while cruising off the Grand Cayman in February last, struck soundings in 17 fathoms, on a bank off the west end of the island, that does not appear to have been laid down in any chart we have seen. The Pickle was anchored on the bank, with the following bearings:—The N.W. point of the Grand Cayman, N.E. b. E. ¾ E.; the S.W. point, E. ¾ S. The latitude and longitude as stated above.

47.—PORT LLOYD, ARZOBISPO OR BONIN ISLANDS. PACIFIC OCEAN. Lat. 27° 0.5′ N. Lon. 142° 14′ E.

We have extracted the following directions for entering Port Lloyd, the principal harbour of these islands, from Captain F. Beechey's valuable narrative of the Blossom's voyage.

"Having ascertained the situation of the port, steer boldly in for the *southern head;* taking care not to bring it to the *northward* of N. 47° E. true, nor to shut in with it two paps on the N. E. side of the harbour, which will be seen nearly in one with it on this bearing. *In this position they are a safe leading mark.* To the southward of this line there is broken ground.

"If the wind be from the southward, which is generally the case in the summer time, round the south bluff at the distance of two hundred yards, *close* to a *sunken rock*, which may be distinctly seen in clear weather. Keep fresh way upon the ship, in order that she may shoot on, and through the eddy winds, which baffle under the lee of the head;* and to prevent her coming round against the helm, which would be dangerous. The winds will at first break the ship off, but she will presently come up again: *if she does not*, be ready to go about, as you will be close upon the reefs to the northward, and put down the helm *before the south end of the island off the port to the westward* comes one with the *High Square Rock at the north side of the entrance.*

"If she comes up, steer for a high *Castle Rock* at the east end of the harbour, until a pointed rock on the sandy neck to the eastward of the *south* headland comes in one with a high sugar-loafed shaped grassy hill to the southward of it. After which you may bear away for the anchorage, taking care not to open the sugar-loaf again to the westward of the pointed rock.† The best anchorage, Ten-fathom Hole excepted, which it is necessary to warp into, is at the northern part of the harbour, where the anchor is marked in the plan.

"In bringing up, take care of a *spit which extends off the south end of the small island* near Ten-fathom Hole, and not to shoot so far over to the *western* reef as to bring a rock, at the *outer foot of the south bluff* in *one* with *some black rocks*, which will be seen near you to the south-westward. The depth of water will be from eighteen to twenty fathoms, clay and sand.

"If the wind be from the northward, beat between the line of the aforementioned *Sugar-Loaf and Pointed Rock* westward, and a north and south line from the Castle Rock to the eastward. This rock on the western side, as well as the bluff to the northward of it, may be *shaved* if necessary. The hand-leads are of very little use in beating in here, as the general depth is twenty or twenty-four fathoms.

"The best watering place is in Ten-fathom Hole. It is necessary to be cautious of the sharks, which are very numerous in this harbour. It is high water 6h. 8m. full and change."

The foregoing directions, with the chart just published of the Islands by the Admiralty, alluded to in another page of this number, are all that are necessary for a vessel bound there.

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* Keep the top-gallant clew-lines in hand.

† This rock is white on the top with bird's dung, and looks like an island.

48.—THOMPSON'S ROCK. *Said to be Eastward of the Scilly Islands. Nearly awash with the surface of the sea.*

The following is worthy the attention of seamen :—

> "Schooner Isabella, from Bilbao to Liverpool—John Ramsay, master,—course N.E.—wind S.S.W.—discovered a rock, supposed to be Thompson's Rock, bearing from Scilly, or St. Agnes Lighthouse, E. b. S. ½ S., distant from it about 10 miles. On the 14th May, 4 p. m., ship's distance from it about 50 feet. Only seen when there is a strong swell; setting at that time from the N.W.—saw it dipping four times. It is a rock resembling a hay-rick, and not above six feet in width, with a small hollow at top, and a crack down it: almost covered with sea-weed. Fresh gale."

We are much inclined to consider this a real danger, from the nature of the ground about the Scilly Islands in general; and we think it by no means unlikely that it exists, although we have heard it asserted by an experienced officer in the Royal Navy, who is a Scilly pilot, that there is no such rock. It is laid down in a chart of Laurie's; and in Norie's Channel Directions we find it is stated to have been discovered by Captain Thompson, in the ship Betty, in 1775, and the position assigned to it is very nearly the same as that by the Isabella. We have therefore given it the place on our chart assigned to it by the Isabella for the present, until we get more certain information concerning it; and we recommend commanders of ships to do the same, and to keep a good look-out for it, should they find themselves in its neighbourhood.

49.—*Buoy and Floating Light at the Entrance of the Hooghly*[*] *Position of the Buoy, Lat.* 21° 6′ *N. Lon.* 88° 12′ *E.*

This Buoy is placed to serve as a guide to point out to ships the position of the floating light-vessel at the entrance of the eastern channel of the river Hooghly, and also to enable them to anchor in a proper position, in the event of the light-vessel being blown away from her station. The present position of the light-vessel is S.W. ¾ of a mile from the buoy. The pilot informs us, that this vessel is now stationary during both monsoons. At 8 p. m. every night throughout the year, she burns a very brilliant blue light, and also every alternate hour during the night until daylight. We saw the glare of the blue light 12 miles off. At 9 p.m. and every other alternate hour during the night, a large red torchlight is shewn, so that, independent of her light at the masthead, she cannot fail being seen by vessels from 8 p. m. to sunrise, at least 8 or 10 miles off, except in hazy weather.

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[*] From the remarks of Mr. J. Higgs, Master, R. N.

50.—BEACONS ON THE SHOALS OFF BATAVIA—JAVA.

The Resident of Batavia gives Notice to the Public, the following Table of the Beacons on the Shoals in the Navigable Water of Sunda Strait, to and from Batavia Road, replaced by Order of the Government of 6th June, 1832. No. 22.

No	Shoals.	Native Names.	Description of the Sea Marks.	Situation of the Sea-Marks.	Depths by lowest water where the Sea Marks are placed.	Bearings taken from the Beacons.
1	Father Smith's Bank	Pulo Poetrie	Beacon with Cross	N. E. point	9 feet	Leyden, N. 27° W.; Bea. No. 2. W. 3° S.
2	Neptune's Shoal	Karang Passier	Ditto	N. W. ditto	12 ..	Ditto, N. 43° E.; E. pt. of Hoorn. N. 31° W.
3	The Pas-op	Karang Tanglane	Ditto	N. E. ditto	12 ..	Ditto, N. 39° E.; ditto N. 26° W.
4	Rhynland Shoal	Karang Tahan	Ditto	E. ditto	12 ..	Hoorn, N. 13° W.; Kniper, N. 61° W.
5	Rygersdaal-Bank	Karang Camal	Ditto	E. ditto	9 ..	Hoorn, N. 25¼° E.; Kniper, N. 22¼° W.
6	The Anus of Purmerend	Karang Djalau	Ditto	E. ditto	13 ..	E. pt. Hoorn, N. 11° E.; Rotterdam, N46°W
7	The Rocks bearing West of the Island Hoorn	Karang Pulo Ayer	Ditto Ditto	In the centre	12 ..	N. ditto, S. 81° E.; Rotterdam, N. 86° W. S. pt. Hoorn, South.
8	The Reef of Rotterdam	Karang Pulo Obie	Ditto	Ditto	15 ..	S. pt. Hoorn, S. 80° E.; W. point of Onrust Kerkhof, S. 60° W.
9	Reef of Purmerend	Karang Pulo Sakeit	Ditto	S. W. point	9 ..	S. pt. Purmerend, N.; Kniper, N. 70° W.
10	Stone of Onrust	Karang Pulo Kelor	Ditto	W. ditto	9 ..	Rotterdam, N. 25° E.; Kniper, S. 33° E.
11	The Mathilda Rock	Karang Prol	Beacon without Cross	N. E. ditto	12 ..	S. W. pt. of Kniper, S. 46½° E.; E. pt. of Rotterdam, N. 36½° E.
12	Reef of Onrust	Karang Pulo Kapal	Ditto	W. ditto	9 ..	The Reefs upon which the Beacons 12, 13, 14, are placed, extend to the Islands Onrust and Kniper.
13 14	The two Points of the Reef bearing North West of the Island of Kniper	Karang Pulo Kniper	Ditto	N. W. ditto	9 ..	
15	Reef of Outong Java	Tanjong Outong Java	Beacon with Cross	N. ditto	13 ..	Haarlem, E.; W. pt. Middleburg, N. 9° W.
16	Reef of Middelburg	Karang Pulo Ramboe	Ditto	S. E. ditto	15 ..	The Coral Reef on which these Beacons are placed, is connected with the Island.
17	The Sauce Reef	Ditto	Ditto	S. W. ditto	15 ..	
18	The Wrange-Rock	Karang Sepat	Ditto	W. ditto	12 ..	S. pt. Middelburg, S. 62° E.; Pulo Dapoor, N. 40° E. At a cable's length to Westward of this, is another rock, 11 feet below the surface.
19	Meyndert's Shoal	Karang Gosson	Ditto	In the centre	12 ..	Klein Kombuis, N. 48° W.; Pulo Dapoor, N. 56° E.
20	Middle Rock	Karang Loemboeng	Ditto	S. W. point	12 ..	Klein Kombuis, N. 61° E.; South point of Great Kombuis, N. 65° W.
21	Reef of Great Kombuis	Karang Pulo Lantjang, or, Karang Papedjie	Ditto	W. ditto	14 ..	S. pt. of Great Kombuis, S. 73° E.; E. pt. of Man Eaters' Island, S. 51° W.
22	South-East Rock	Karang Tangara	Ditto	In the centre	15 ..	E. pt. of Man Eaters' Island, S. 50° W. N. pt. of Great Kombuis, S. 76° E. Beacon No. 21, S. 63° E.

The Beacons with Crosses, are Beams with a Cross-tree painted white, extending 12 feet above water. The Beacons without Crosses are single beams, white, and 12 feet above water. In case one or more of the Beacons should be removed by the violence of the weather or otherwise, bamboo stakes, 15 or twenty feet above water, with baskets covered with cloth painted black and white, will be placed in their stead, until they can be replaced by proper wooden pillars. Beacon No. 11, stands upon a rock not laid down on any chart, to which the name of Mathilda rock has been given, it being known in Malay language by the name of Karang Prol. The rocks on which Beacons 18 and 20 are placed, have hitherto had no Dutch names—they are now called the Wrange and the Middle Rock.

Batavia, 6th Dec. 1832.

THE RESIDENT OF BATAVIA, (Signed) VAN DER VINNE.

51.—BUOY ON THE DEAL BANK.

"*Trinity-House, London,* 21*st March,* 1833.

"Notice is hereby given, that this corporation has caused a Buoy, painted *Red,* and marked on the head "*Deal Bank,*" to be laid in 5 fathoms at low-water spring tides, near the eastern projection of the shoal lying off the town of Deal, and with the following marks and compass bearings, viz.:

The Telegraph near the South Foreland, on with the south part of the North Cliff of Old Stairs Bay, bearing............ S.W. ½ S.
Upper Deal Church Tower on with the flag staff in the king's yard at Deal.................................... W. ¾ N.
St. Clement's Church Tower at Sandwich on with the west side of Sandown Castle .... N.N.W.

"By Order, "J. HERBERT, Secretary."

TIDE-TABLE FOR JULY, 1833.

Mean Time.

Week D.	Month D.	PLYMOUTH *Dock Yard.*				PORTSMH. *Dock Yard.*				SHEERNESS *Dock Yard.*				LONDON *Bridge.*				ABERDEEN.				LEITH.				Month D.	D's Age at Noon
		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.			
		h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.		
M.	1	4	52	5	13	11	1	11	21	....		0	19	1	20	1	42	0	33	0	53	2	8	2	28	1	13·5
Tu.	2	5	35	5	56	11	42	....		0	41	1	2	2	3	2	27	1	12	1	30	2	47	3	5	2	Ful
W.	3	6	16	6	35	0	2	0	22	1	21	1	39	2	47	3	5	1	47	2	5	3	22	3	40	3	15·5
Th.	4	6	51	7	8	0	42	1	0	1	56	2	13	3	22	3	41	2	21	2	37	3	56	4	12	4	16·5
F.	5	7	25	7	40	1	18	1	36	2	30	2	46	3	59	4	19	2	52	3	8	4	27	4	43	5	17·5
Sat.	6	7	56	8	12	1	52	2	10	3	3	3	21	4	39	5	0	3	24	3	41	4	59	5	16	6	18·5
S.	7	8	27	8	43	2	28	2	45	3	38	3	55	5	22	5	41	3	58	4	15	5	33	5	50	7	19·5
M.	8	8	59	9	16	3	4	3	23	4	12	4	30	6	2	6	21	4	33	4	53	6	8	6	28	8	20·5
Tu.	9	9	36	9	56	3	45	4	4	4	50	5	10	6	46	7	11	5	15	5	40	6	50	7	15	9	21·5
W.	10	10	18	10	44	4	27	4	52	5	30	5	54	7	32	7	57	6	7	6	37	7	42	8	12	10	LQ
Th.	11	11	14	11	48	5	20	5	53	6	24	6	52	8	19	8	44	7	12	7	50	8	47	9	25	11	23·5
F.	12	....		0	29	6	26	7	2	7	28	8	6	9	17	9	43	8	30	9	8	10	5	10	43	12	24·5
Sat.	13	1	8	1	48	7	36	8	13	8	50	9	30	10	10	10	40	9	44	10	16	11	19	11	51	13	25·5
S.	14	2	24	2	59	8	47	9	18	10	6	10	40	11	7	11	37	10	46	11	13	....		0	21	14	26·5
M.	15	3	34	4	4	9	48	10	16	11	9	11	36	....		0	5	11	39	....		0	48	1	14	15	27·5
Tu.	16	4	31	4	58	10	42	11	7	....		0	3	0	35	1	5	0	5	0	29	1	40	2	4	16	28·5
W.	17	5	23	5	49	11	30	11	55	0	27	0	55	1	31	1	51	0	54	1	18	2	29	2	53	17	NM
Th.	18	6	14	6	37	....		0	20	1	19	1	41	2	28	2	55	1	42	2	5	3	17	3	40	18	1·2
F.	19	6	58	7	18	0	44	1	7	2	3	2	23	3	19	3	46	2	28	2	51	4	3	4	26	19	2·2
Sat.	20	7	37	7	56	1	28	1	49	2	43	3	4	4	12	4	37	3	13	3	35	4	48	5	10	20	3·2
Su.	21	8	16	8	35	2	11	2	32	3	25	3	47	5	3	5	29	3	56	4	18	5	31	5	53	21	4·2
M.	22	8	54	9	15	2	55	3	18	4	7	4	28	5	54	6	21	4	41	5	3	6	16	6	38	22	5·2
Tu.	23	9	37	10	0	3	40	4	5	4	51	5	13	6	44	7	6	5	26	5	53	7	1	7	28	23	FQ
W.	24	10	25	10	57	4	32	5	1	5	37	6	8	7	33	7	55	6	23	6	56	7	58	8	31	24	7·2
Th.	25	11	31	....		5	34	6	11	6	39	7	15	8	17	8	43	7	34	8	15	9	9	9	50	25	8·2
F.	26	0	13	0	57	6	50	7	26	7	54	8	36	9	17	9	51	8	55	9	33	10	30	11	8	26	9·2
Sat.	27	1	36	2	11	8	1	8	35	9	17	9	52	10	29	11	7	10	9	10	41	11	44	....		27	10·2
Su.	28	2	45	3	16	9	6	9	33	10	23	10	51	11	41	....		11	9	11	34	0	16	0	44	28	11·2
M.	29	3	45	4	11	9	58	10	22	11	16	11	38	0	11	0	41	11	56	....		1	9	1	31	29	12·2
Tu.	30	4	33	4	54	10	43	11	3	12	0	....		1	6	1	30	0	17	0	37	1	52	2	12	30	13·2
W.	31	5	15	5	35	11	23	11	42	0	21	0	41	1	52	2	11	0	56	1	13	2	31	2	48	31	Ful

The times of high-water, nearly, at other places on the coast, may be found with the assistance of the above table within certain limits. Thus, the times in the Plymouth-Dock column are to be used for all places between the Land's End and Lyme Cob; and those in the Portsmouth column, for all places between Portland Bill and Beachy Head; by adding or subtracting the time opposite each place, according to the sign + or —.

The times of high-water at Plymouth Dock-Yard are to be used with the difference against the following places, to find the time of high-water there on the same day:—

	h. m.		h. m.
Mounts Bay and Lizard . . .	— 1 3	Eddystone	— 0 18
Falmouth Harbour . . .	— 0 18	Dartmouth and Torbay . .	+ 0 27
Fowey Harbour	— 0 18	Exmouth	+ 0 52
Cawsand Bay	— 0 10	Lyme Cob	+ 0 27

The times of high-water at Portsmouth Dock-Yard are to be used as above, for the following places:—

	h. m.		h. m.
Portland Bill	— 6 10	Cowes	— 0 55
Weymouth Harbour	— 5 10	Southampton	— 1 0
Christchurch and Poole Harbours	— 2 50	Bembridge Point	— 0 40
Needles Point	— 1 55	Selsea and Arundel Harbours .	+ 0 5
Hurst Chamber	— 1 40	Shoreham Harbour . . .	— 0 25
Lymington	— 1 25	Beachy Head	— 1 25

VOYAGES AND MARITIME PAPERS.

I.—Massacre of the Crew of the Ship Oldham by the Natives of Wallis Island.

In the course of our cruise among the islands of the Pacific Ocean, in H.M.S. Zebra, while we were at Keppel's Island, a vague report reached us on the 14th of May last, that a British ship had been cut off by the natives of Wallis Island. Captain Macmurdo, our commander, immediately determined on going there, and we accordingly sailed for that island, where we arrived on the 20th. The passage had been quickly made, and we had soon gained the island; but to find an entrance into the lagoon was not so easy.

As we ran along the outside of the reef, looking for a passage in, and making signals for a pilot, a ship was seen at anchor under the land: it was observed also that she shewed no colours, and appeared in a dismantled state. On the following day, the 21st, after a minute examination, a narrow opening through the reef was discovered on the south side of the island; and in the evening of this day, two canoes were also observed inside the reef. In the hope of obtaining a pilot, Mr. Montresor, mate of the Zebra, was despatched, to communicate with them for this purpose. After some time had been lost in a vain attempt to get some information by hailing the natives across the reef, a communication was effected with them by Mr. Montresor, who jumped overboard from the boat, and swam to it. No intelligence, however, respecting the ship, her crew, or the nation to which she belonged, could be gained.

As we were unable to find any other opening than the narrow passage before alluded to, it was at once determined to take the Zebra through. On the following day the attempt was made, but, owing to baffling winds, and a strong ebb-tide, she was drifted on the larboard reef, and we were glad to haul off again to seaward. Every effort was made to find another entrance, but without effect, when, on the 23d, Captain M'Murdo, considering, from the silence and absence of the natives, that the report we had heard was indeed true, determined on sending an armed force to the ship. Lieutenant Shelley was selected for this duty, with written instructions to examine the ship, and if she was in the possession of the natives, which we had reason to suppose was the case, he was to endeavour to bring her out, and to use force only in case it should be necessary.

Lieutenant Shelley left the Zebra, with the pinnace and cutter under his orders, and at 6 h. 40 m. the boats returned, having one man, named Thomas Williams, a private of marines, killed by the

WALLIS ISLAND. *From the Southward*
(Pacific Ocean)
Lat. 13° 22 S. *Lon.* 176 4 W

[illegible]

natives. The following is the substance of Lieut. Shelley's report of this affair:

According to his instructions, he proceeded with the pinnace and cutter as soon as possible to the vessel, which was seen at anchor some distance from the entrance of the reef. Having reached her, he obtained possession of the upper deck, without any opposition on the part of several natives who were on board, and were armed with tomahawks, but who had previously shewn a disposition to prevent the boats getting alongside, by pointing the long guns at them. With the view of conciliating them, Lieut. Shelley commenced questioning them, to ascertain the name of the vessel, and the fate of her master and crew; and one of the natives, who could speak a little English, said that she was called the Oldham, and that the master and crew were all dead. To further questions, however, he answered that they were all killed. On being asked to whom the ship belonged, the fellow modestly replied, to the king of that place, pointing to a village abreast of which the vessel was anchored.

This parley appeared to be going on amicably enough, when a boat was reported coming from the shore, and full of natives; on which all those that were on the deck of the vessel, being 13 in number, were sent down below. As a further measure of precaution, there being several natives already there, the marines who had accompanied Lieut. Shelley were sent down to see that they did no mischief, and, moreover, to prevent their rising on his men. This was necessary, in the event of an attack being made by those in the boat approaching the ship. A number of them immediately assembled in the cabin, and barricaded the door, when Thomas Williams, one of the marines, who was the first in pulling the door down, in order to see what was going forward, received several severe blows from tomahawks, and instantly fell. His comrades seeing him fall, fired on the natives who were in the cabin, and several of them in consequence lost their lives. The natives in the boat, when they heard the reports of the musketry on board, commenced firing musket-shot into the vessel, which it was necessary to stop. This was soon done by the 12 lbs. carronade in the pinnace being brought to bear on them; and on finding the effects of the carronade they quickly followed the example of their friends in the vessel, by jumping into the water, and swimming to the shore. Lieut. Shelley had been directed to take the vessel down to H. M. S. Zebra; but as she was completely stripped of every thing, and the distance she lay from the entrance being five or six miles, with the tide running unfavourably, he considered it most advisable to abandon her, and return on board the Zebra as quietly as possible, which was accordingly done. Unhappily, the marine who had been wounded died before they reached their vessel.

It was now considered still more necessary than before to effect a communication with these people, and fresh efforts were made to find another entrance through the reef. While we were in search of one, the British barque Caroline was discovered approaching the island; and on boarding her, it was ascertained that the entrance first seen was the only one. The chief mate of the brig Brisk, of London, which vessel had struck in this passage, and sunk a short time previous, took charge of the Zebra, as pilot. In the course of this evening, a fire was discovered in the direction of the Oldham, which continued visible throughout the night, and convinced us that prompt and decisive measures were indispensably necessary.

All hazard seemed nothing now, compared to the necessity of opening a communication, that we might prevent a similar occurrence to any other vessel which might arrive, ignorant of the Oldham's fate. On the next day, therefore, the Zebra, with a steady breeze, stood for the entrance, through which the rush of water and surf was tremendous. By the careful management of the mate of the Brisk, we passed safely through the passage, and ran among the inner reefs, about seven miles to the burning wreck, followed by the Caroline whaler. Having anchored about two miles from her, a party was immediately sent, to endeavour to extinguish the fire, but without effect.

On the 26th a communication was opened with Lavalore, the principal chief of the island, and on the following day he came on board, with his suite, accompanied by Craven Nicholson, the only survivor of the Oldham's crew. Captain Walker, the pilot, volunteered to remain on shore as hostage for the king's safety. Although our feelings had been previously highly wrought up by the sad outrage we had come to redress, much mirth was excited when this illustrious personage made his first appearance on board. The instant that the chief landed on the bulwark of the Zebra, a ferocious looking fellow thrust his head unceremoniously between his legs, ready to raise him upon his shoulders, and carry him along the quarter-deck; for these important persons, on state occasions, are always carried in this way, as described by Cook and others. But the uncouth appearance of the face of this savage in such an odd situation fairly put our gravity to the test; and to preserve it, this ceremony was dispensed with.

Matters now began to wear an appearance of business. The table was covered with such good things as could be procured, and his Majesty and suite decended to the feast which had been prepared. Three natives were selected by himself, to sit at the table with him; the others squatted down, much to our annoyance; and all ate greedily of every thing that was given them. The king, as much out of curiosity probably as good humour, tried to eat with a knife and fork, to the great danger of his eyes, nose, and face.

with which they were continually coming in contact. The priest, who had previously tabooed the Zebra, by hanging a charm on the fore-top-gallant-stay, amused the royal party by singing, or rather reciting, something in not an unpleasing tone of voice. The subject appeared to belong to the present occasion, for the words *miti*, *miti*—good, very good, alluding perhaps to the viands before them—was very frequent; and the expression of their features was well calculated to favour the opinion.

In the evening the party were landed, well satisfied with their reception; the next day being appointed to return the visit on our part, and to commence the Oldham's business. Craven Nicholson was extremely anxious to return with the natives; in fact, he was so pleased with their mode of life, that he stated his wish to remain among them. But as things were not yet settled, directions were given that he should be narrowly watched, and not on any account be allowed to leave the Zebra. The following statement respecting the massacre of the Oldham's crew was afterwards made by him; and it seemed to the captain and officers, on cross-questioning him, to be perfectly correct:

On or about the 26th or 27th of March, 1832, the barque Oldham, of London, ——— Skelton, Esq. of London, owner, and Robert Johnstone, of Lewisham-lane, Blackheath, master, anchored in the harbour of Wallis Island, South Pacific Ocean, and found lying there, the British ship Harriet of London, and the American whalers Milo of New Bedford, and the Almira of Edgartown. On or about the 3d or 4th of April, the native girl who was living on board with the captain, ran away; and the next day he went on shore, with an armed boat, and demanded her. The chiefs ordered her to be brought down to the beach, and told him, (the captain,) that they would kill her if he wished, at the same time the boat's crew were forcing the women into the boat against their consent.

About this time, three men who had deserted from the British ship Corsair entered on board the Oldham, leaving their clothes in the bush. On going on shore for them some days afterwards, they discovered that most of them had been stolen. They returned on board, and stated this to the captain, who sent two boats to search the native huts for them. They returned, bringing some clothes, and a quantity of beads, tapa, mats, fish-hooks, &c. which they had plundered. Some of the old mats and tapa were returned.

The three vessels before mentioned sailed, leaving us alone in the harbour.

On or about the 11th of April, several of the natives came on board: the captain being in a state of intoxication, took two of them into the cabin, shewed them the muskets and other arms, and told them it was his intention to go on shore next day, and kill the king, desiring a negro man named Reubens, who lived on shore, to tell them so. The moment they understood this, a native went out to the jibboom end, and hailed the natives on shore. Two canoes immediately came off. One of our men who was in the main-chains saw them (the natives) handing cutlasses and axes out of the canoe. He informed the captain of it, who immediately ordered them out of the ship. They obeyed, and said they would return the next day with cocoa-nuts.

They accordingly came at daylight, and gave away their cocoa-nuts, without asking payment. At breakfast-time, the waist boat, with the second mate, four men, and a boy, went to the king's village to search for four New-Zealanders who had ran away. About 9 o'clock one of our men told the captain that the native women were jumping overboard, and that the men were collecting aft. At this time the captain, who was in liquor on the quarter-deck, and swearing, was cut down with an axe and killed, and at the same moment I was struck on the head with an axe by a chief, who afterwards knocked me down the companion-ladder with the flat part of it; he followed me down, and struck me on my leg, but seeing a New-Zealander preparing to fire upon him with a musket, he left me and killed him. During this time I escaped, and hid myself behind some casks, therefore I only saw the captain and New-Zealander killed. On the next day I heard a Portuguese and some Whahoo men talking; I called to the former, who gave me some biscuit and water, and he told me that Captain Russell, of an American whaler, outside the reef, had been alongside, but, on finding what had taken place, he had returned on board, and was then firing upon us from his ship, and said the natives wanted powder to return it. I told him I did not know where it was. He also told me that the ship was under way and going higher up, and that all our people had been killed. Shortly afterwards he brought a chief's sister to me, and she, with a chief, (the same who cut me down) prevailed upon the other natives to save my life. They afterwards took me on shore, and treated me with kindness and affection. The whole of the boat's crew who went on shore were, with three Americans belonging to a whaler, also killed. The Whahoo natives assisted the islanders in working the ship up, but I have every reason to believe that they acted from compulsion. The leading chief in this melancholy affair was Tuccoroa, who was killed afterwards by the Zebra's people, when the Oldham was boarded by them. The ship had between 500 and 600 barrels of oil on board.

Signed, CRAVEN NICHOLSON.

Witness, { G. L. A. MACMURDO.
J. H. COOK.

A List of the Crew of the late ship Oldham when she was cut off by the natives of Wallis Island, April, 1832.

Robert Johnstone, Commander.
William Williams, alias Green, Chief Mate.
Robert Huertson, Second Mate.
C. Birch, Third Mate.

Seamen.

J. Bryan.
T. Taylor, T. Smith, sen. Boat Steerers.
T. Smith, jun. Boatswain.
J. Kary, Seaman.
William Catherside, Cooper.
William Wilson, Cooper's Mate.
A. Stephenson, Carpenter.
J. Tucker, Cook.
T. B. Redfearn, Boy.
J. Bert, Do.
E. Greagy, Portuguese.
5 Seamen belonging to Corsair & Milo.
3 Americans (Milo) killed on shore.
4 New-Zealanders .... on board.

28 Persons killed.

Wiliam Stevens, Surgeon, Wm. Baker, Boatsteerer, W. Reynolds, Apprentice Left Oldham at the Navigators

H.M.S. Zebra, Wallis Island, June 1st, 1832.

The next day Captain Macmurdo, with some of the officers, went on shore, to return the visit of the previous day, and at the same time a party was sent to complete the Zebra's water. After partaking of Cava, which is well described by Mariner, and is a formal preliminary in all matters of political discussion, Captain Macmurdo demanded, in the name of his Majesty the King of Great Britain, every article that had been taken from the wreck of the Oldham. With this demand, our friend Lavalore, the principal chief, readily acquiesced; but it soon appeared evident that the others (among which was the young chief who cut down, and afterwards adopted the boy Nicholson) were averse to this measure, and momentary suspicions were entertained that it would be necessary to proceed to hostilities, to enforce our demand. The presence, however, of the men who formed the watering-party, and who were well armed, with the view of protecting us, as well as getting water for the vessel, kept these refractory spirits quiet; and two chronometers, with several minor articles, were quickly brought and delivered up. Not so with the whale-boats and fire-arms, which were objects of great importance to recover; and the reluctance manifested in delivering them up, proved the value the natives set upon them.

The proceedings of the evening were terminated by a Cava party, and a grand *heva*, or dance. The first part of the dance was conducted with great solemnity and order, and was performed by the chiefs and warriors, with their clubs in their hands. The women joined in the dance; and their attempt at music, accompanied by their songs, produced by no means an unpleasing effect. This was terminated by one of those lascivious dances, or rather contortions of the whole frame, which are so prevalent in these islands, and which are the more disgusting as the men are the performers. The evening, however, went off quietly and pleasantly enough, and we were by no means dissatisfied with the progress we had made in the Oldham's business. It is rather remarkable, that in the evening of this day, in which we had recovered the first part of the Oldham's stores, she sunk at her anchors.

On the next day it was intimated to Lavolore, and his chiefs, that if the boats and fire-arms were not given up, with a variety of articles which it was known were secreted, an armed party would be landed to enforce the demand. This threat had the desired effect; for, shortly afterwards three whale-boats, a number of muskets, and three 12-pounder carronades, were brought out of the bush. In the mean time, an active but quiet search was made by an officer, with a party of men, in the surrounding jungle, and many things which had been hidden were discovered, at the risk of their lives; for, being separated from each other, they might have fallen easy victims to the many disaffected natives who wished to retain their ill-gotten booty. One of the officers,* in pursuing two natives into the bush, who were carrying off something covered with green baize, was led into a morass, where he suddenly found himself up to his knees in mud, and from which he extricated himself with much difficulty. It so happened that none of the party were near him; and, had the natives taken advantage of his situation, he might have fallen, and his fate would probably never have been known. Happily, however, he retained his self-possession, extricated himself, and rejoined his companions.

Having recovered every thing which had belonged to the Oldham worth carrying away, we completed our stock of water, and procured a small supply of pigs, fowls, &c., by barter, from the natives, by which means we contrived to maintain a friendly feeling with them. Preparations were made for the Zebra's departure; but we took care to despatch the Caroline whaler to sea before us, so as to prevent any further dispute with the natives after we had left.

A word or two must now be said in favour of the natives of this interesting island, for, in the course of the discussions and explanations which took place with us, it appeared that they had been for several years exposed to much ill-treatment. The following facts were elicited :—About five or six years ago, George Minimi, whose father was an American, his mother being a native of one of the Sandwich Islands, where he also was born, came to this island, bringing with him a number of adventurers. With their aid he obtained possession of the island at the entrance, which now bears his name, (vide Sketch,) and called himself an Englishman, or European. Very soon he contrived to monopolize the whole of the European trade, made the natives entirely subservient to his views of aggrandizement, and, disdaining the subordinate character of a subject, he assumed the part of a despotic sovereign. Without hesitation, he violated the laws and customs of the islanders, and took under his protection the runaways of all nations, as well as the malcontent natives who chose to join his cause. Thus, having gained sufficient strength, he set the lawful chiefs at defiance, and, after committing various outrages, his last act of violence (about November, 1831) was to invade the king's village, and carry off or destroy all the live and dead stock belonging to the villagers. He even rooted up the growing crops; and when expostulated with by the king, deliberately threatened to deprive him of life, as well as power. This last iniquitous proceeding roused the native chiefs to a just sense of their degraded situation and sufferings; and in the midst of his fancied security, his life paid the forfeit of his crimes. His followers were nearly to a man cut to pieces, and his property distributed over the island.

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* This happened to the officer from whose notes this account is drawn up.

While the natives were smarting under the oppressive acts of this man, the Oldham arrived, and the captain and crew commenced the same lawless and unjustifiable line of conduct. Therefore it ceases to be a matter of surprise that the islanders had recourse to so severe a retaliation. It was, however, explained to Lavalore, that nothing short of actual self-defence could justify murder, and that a repetition of such a sanguinary act would call down on him, and his country, all the vengeance of the British government. He denied any participation in either the plan or the attack, ascribing it all to Tuccoroa, one of his chiefs, who was killed by the Zebra's people, when the Oldham was first boarded by them. Poor Lavalore! he promised a faithful compliance with the laws of civilized nations, as far as he could influence his subjects; but he did not seem to feel himself very secure in his exalted station, for, on the Zebra's getting under way, it was with difficulty he could be induced to leave her. In consequence of the part he had taken in giving up the Oldham's property, he fully expected that Tuccoroa's friends and relatives, who were the principal holders of this property, would kill him as soon as we left the island, which we did on the 3d of June. Lavalore is a fine handsome young man, about six feet two inches in height, and well proportioned; and it is to be hoped that his fears may not be realized.

Paganism is the prevailing religion of these people, no missionaries having yet visited Wallis's Island.

II.—*To the Editor of the Nautical Magazine.*

Mr. Editor—You were pleased in a former number of your Magazine to insert a paper which I communicated to you, relative to the placing a transit-instrument in the meridian under the equator, without the assistance of a time-piece, or any instrument to measure angles; and this has brought to my recollection another subject connected with my former communication.

Mankind in general are apt to dote, a little fondly, on any device of their own; which I confess was the case with myself, after I was satisfied with the solution of my former problem: I was naturally led to consider what peculiar advantages might be derived from astronomical observations made at the equator; and as nothing further with regard to the transit-instrument presented itself, I took the mural circle into view, and, after placing it (by imagination) in the meridian, I could find nothing new, until the recollection of having placed the transit-instrument east and west induced me to turn the pier and circle in this direction likewise; and, as far as I can recollect, the first idea that struck me was, that it might be useful in deducing the constant of refraction by such a process as the following:

Let a mural circle be placed on a pier facing the north or south, when the telescope will move in the prime vertical, or in an east and west direction. Point the telescope towards the eastern horizon; and when a star comes into the field, clamp the circle. It is evident the star will appear to rise vertically in the field of view, and with a velocity equal to that of an equatorial star passing the field of a common transit instrument of equal magnifying power. If the eye-piece of the circle telescope be supplied with five, or more, horizontal wires, the instant of the star's passing the mean of the wires can be observed, with the help of a sidereal clock, in the same way as in a common transit observation; and the reading of the circle when the index error is known, will shew the zenith-distance of the star at that instant. As the star continues to rise, observations of this kind may be made every five minutes, till it comes to the zenith, which is in the meridian itself; and in like manner, the observations may be continued from the zenith towards the western horizon.

The index-error of the circle, or rather the reading which corresponds to the zenith-point, may be obtained by observing the passage of the star over the meridian by a transit-instrument, rectified in the manner pointed out in my former paper, and comparing the time of this passage with the transits over the circle-wire, in or near the zenith. It might perhaps be simpler and safer to determine the horizontal points of the circle by employing observations by reflection alternately with observations by direct vision, especially pretty near the zenith. In one way or the other, the actual zenith distances of the star at each observation may be found.

Now, the differences of time shewn by the clock (corrected for daily rate) between the star's passage over the meridian and over the mean of the wires at the moment of each observation, will, when converted into space, shew the true zenith distances, unaffected by refraction; while the zenith distances read off upon the circle will be diminished by the whole of the refraction. Hence the difference of the two will be the refraction due to the zenith distance at each observation.

A CONSTANT READER.

III.—MEMOIR OF JEAN BART.

——— Vixere fortes ante Agamemnona
Multi.

ENGLAND, of all other countries, needs not seek beyond her own sea-girt limits, for examples of heroic deeds upon that element which she has full often made the scene of her glory. Still, a knowledge of foreign biography tends materially to soften down the asperities of international prejudice, and to excite mutual feelings of kindness and generosity. With this view, we venture to offer to our readers the following memoir of one of the bravest seamen of his own or of any other age.

Like many of our own countrymen of the same profession, Jean Bart was the author of his own greatness. Beneath the humble roof of a fisherman's cot, he was born, at Dunkirk, in the year 1651. Such was the origin of him who was afterwards honoured by the particular notice of his sovereign, Louis XIV. and the fame of whose exploits reached the remotest corners of the earth.

Bart at a very early age evinced a determined predilection for a seafaring life. When quite a youngster, he would steal on board the armed coasting vessels; and in their desultory skirmishes with an enemy, his delight was, in running from one part of the deck to the other with powder and shot. On one occasion, as he was descending from aloft during an action, a grape-shot cut a part of the rigging, and he was precipitated from a height of nearly thirty feet; but he escaped by falling upon the dead bodies of two of his companions—and, in the cold embrace of death, a life was preserved, destined to act so splendid a part in the drama of the world. Thus he enjoyed his own peculiar inclination, when a singular deed of daring, and presence of mind, singled him out for notice; this was, snatching the fusée from a shell that had fallen on the deck of his vessel.

Jean Bart aspired to a more extended sphere of action. He accordingly went to Holland, where he served for some time under the famous de Ruyter, and distinguished himself by his intrepidity and seamanship. On the breaking out of the war between France and Holland, in 1674, he returned to Dunkirk, and, having made a considerable sum in prize money, he resolved to commence operations on his own account. He therefore fitted out a privateer, mounting two guns, and having manned her with thirty-six men, he proceeded to cruise off the Texel, where he fell in with a Dutch vessel of eighteen guns, and seventy-five men. This vessel he captured by boarding, and carried her safely into port. Having made several other such prizes, Bart entered into an association with some merchants at Dunkirk, and fitted out a ten-gun sloop, the Esperance, the command of which was bestowed on him. He had not left port many hours before he met with and captured, after a severe action, a Dutch ship of twelve guns. He afterwards sailed for the Baltic, where he fell in with a fleet of merchantmen, under the convoy of two ships, one of fourteen and the other of eighteen guns. The latter of these he carried by boarding; and having obliged her consort to sheer off, he either captured or destroyed the whole of the convoy.

Encouraged by these brilliant successes, the members of the association now fitted out a squadron of five ships, to the command of which our hero was appointed. He accordingly hoisted his flag on board the Palen, of eighteen guns. Early in March 1676, he put to sea, and shortly after captured a Dutch ship, valued at 50,000 crowns. A few days after this, he fell in with eight large merchant ships with valuable cargoes, outward bound from London, and convoyed by three ships of war; one of them mounting twenty guns, and the two others of twenty-four and twenty-eight guns. He boarded the former, whose captain he killed with his own hand; and having struck her flag, he bore up against her consorts, but they made off, leaving the whole of their convoy in the hands of the intrepid Bart. Jean Bart never returned to port without some valuable prizes. In May 1677, he fell in with sixteen merchant ships on their passage from Holland to England, escorted by a frigate mounting twenty-four guns. He immediately laid her alongside, and succeeded in capturing her and the merchantmen, after a desperate action of three hours, the Dutch captain having made a most gallant defence. Having refitted his ship, in the month of September of the same year Bart again put to sea, and fell in with a fleet of merchantmen under convoy of a thirty-six gun frigate. Nothing daunted by the great disparity of force, the intrepid Bart led on his boarding party, and fought his way to her colours, which he himself struck. On this occasion, too, the whole convoy became his prizes, and he received a gold chain and medal from Louis XIV. as a reward for his gallantry.

Peace now put a stop for a time to the active and glorious career of this extraordinary man. But the king, who had often listened with delight to the recital of his gallant deeds, wished to have him in his service, and, at the recommendation of the celebrated Vauban, his majesty made him a lieutenant in the royal navy, and gave him the command of a ship of fourteen guns, with a commission to cruise against the Barbary pirates. He soon after captured a pirate of sixteen guns, which he carried into Toulon. On the breaking out of the war between France and Spain in 1683, Bart was appointed to a frigate, and sailed on a cruise in the Mediterranean. In the action between the French and Spanish fleets off Cadiz, Bart greatly distinguished himself in capturing two of the enemy's ships, although he was severely wounded in the thigh. In 1688, we find him commanding the Serpente, a frigate of twenty-four guns, in which, in company with the celebrated Chevalier Forbin, who commanded a ship of sixteen guns, he sailed from Dunkirk for the purpose of convoying some store-ships round to Brest. On their passage they fell in with a Dutch privateer, which after a long chase they at last came up with, and carried by boarding: the Dutchman resisted to the last, and did not strike his colours until one half of his crew were "hors du combat."*

Forbin and Bart now received orders to proceed to Havre de Grace, and take under their convoy a fleet of twenty merchantmen ready to put to sea. Half way down the channel, they fell in with two British ships-of-war, of fifty guns each, Great Britain being then at war with France. Count de Forbin urged Jean Bart to make off, but he indignantly spurned the advice. They therefore armed three of the stoutest merchantmen, and ordered them to attack one of the British ships, while they engaged her consort. Jean Bart, making a signal to de Forbin to support him, stood towards one of the British frigates; and, the wind falling calm, he failed in his attempt to board; but the Chevalier de Forbin coming up to his assistance, they attacked the English with so much vigour, that they drove them from the deck and forecastle, and were on the point of taking possession of her, when the other English vessel came up. The three merchantmen, in the mean time, instead of coming into action, as had been arranged, sheered off. The action was now renewed with great gallantry; the ships fought yard-arm and yard-arm. Jean Bart and de Forbin, in order to afford their convoy time to escape, made the most desperate resistance, but, reduced to a mere wreck, their decks swept from stem to stern, themselves both wounded, they at last hauled down their colours:—the victory was dearly purchased, every officer, with the exception of the master, on board the English ship, being killed or wounded. From this man, who carried them into Plymouth, they experienced the most rigorous and ungenerous treatment. Count de Forbin was literally stripped of all his clothes; but Bart was allowed to retain his, as he could speak a little English. On their arrival at Plymouth, the port admiral gave them a grand dinner, a compliment, according to de Forbin's memoirs, that savoured more of a *mauvaise plaisanterie* than of hospitality; for, notwithstanding the chevalier was destitute of apparel, he was not even offered a shirt. On his name and rank being known, it was insisted that he should take the seat of honour at table. "I never think," says the chevalier, "upon the singular contrast between my appearance and the place I occupied, without laughing; but I did not laugh at the moment, for I felt too keenly the indignity of the admiral's treatment, whose attentions were confined to this single instance."

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* On this occasion, the following singular anecdote is related of Bart, by some of his biographers. Wishing to inure his eldest son to the dangers of the sea, he carried him with him on this cruise. At the moment the privateer opened her fire, Jean Bart is said to have fixed his eyes stedfastly on his boy, and perceiving some symptoms of fear, he lashed him to the mainmast, and left him there during the action. But we consider this as fabulous, particularly as the Chevalier de Forbin, who was present in the action, has made no mention of it in his memoirs.

Two men like de Forbin and Bart were naturally impatient of confinement; their whole time was therefore occupied in devising the means of escape. At last, a small Ostend boat, commanded by a relative of Bart's, was blown into Plymouth, who, hearing they were prisoners, came to see them. This man, for a bribe of 500 livres, offered to effect their escape, in which he was joined by the surgeon, a Dutchman, who had dressed their wounds. Being provided with a file, Bart and his companion, cut the iron bars of their prison windows, and, by means of their bed-clothes, succeeded in descending, and gaining the boat. Profiting by the darkness of the night, they cleared the harbour in safety, and landed, forty hours afterwards, near St. Maloes, where their arrival produced an extraordinary sensation, for they were both considered as dead. De Forbin immediately posted to court, where the minister of marine was so surprised at seeing him, that he said, "Par ou diable avez vous passé?" "Par la fenetre, Monseigneur," was the witty reply.

In 1690 the king fitted out a large armament at Brest, the command of which was given to Count de Tourville, under whose orders Jean Bart commanded the Alcyon, of forty-two guns. This fleet sailed on the 23d of June, 1690, and ravaged the English coasts. Count Tourville having sought for some one of sufficient boldness to reconnoitre the enemy, Jean Bart immediately volunteered, and, getting on board a small vessel, he approached the enemy during the night, and, having attentively examined his position, he returned, and made his report. The enemy's force consisted only of fifty-seven ships-of-war, and thirty smaller vessels and fire ships. They were drawn up in line to windward. The Dutch led the van; the English admiral of the red, the centre;

and the admiral of the blue, the rear. In the action that ensued, the Dutch lost fifteen ships.

On the following year, nothing particular having taken place between the hostile squadrons, Jean Bart withdrew into Dunkirk, where he was closely blockaded by the English; but, impatient at this inactive life, he proposed to the minister of marine to fit out a small squadron, with which he assured his excellency that he would slip through the enemy's fleet, and annoy their trade in the north. The minister, approving of the project, furnished him with the money requisite for the enterprise: the project was, however, nearly defeated, owing to the jealousy of some one about the court, who, envious of Bart's success, insinuated to the minister that the project was impracticable, and conceived solely with the view of his own personal benefit: the minister lent too ready an ear to these insinuations, and wrote a letter to Bart, ordering him to discontinue the preparations; but Jean Bart having finally, in concert with Monsieur de Forbin, overruled all his objections, the minister relented, and, the equipment of their squadron being completed, Forbin and he got under way at night, Jean Bart leading the van, directing the other captains to follow him, and do as he did. He accordingly dashed through an opening left by the enemy's ships, fired both his starboard and larboard guns, and thus got clear out to sea, while his opponents never once dreamed of an attack. By daylight he was out of sight. Towards night he discovered six sail keeping the same course as he did. On proceeding to reconnoitre them, he found that they consisted of four English merchantmen, bound for Russia with valuable cargoes on board, under the convoy of two ships-of-war, one of fifty, and the other of forty guns; the former of which he attacked, and, taking possession of her without resistance, he succeeded in capturing the other and her valuable convoy, estimated at upwards of £4,000,000. Two days after this, Jean Bart came up with a Dutch fleet, returning from the herring fishery; the whole of which, including the escorts, he captured. Soon afterwards he carried a large Dutch frigate, which he burnt. In fact, it would lead us too far, were we to enumerate all the prizes he made during this cruise. We shall content ourselves by stating, that after this he sailed to the coast of Scotland, where he landed, and entrenched three hundred of his followers; he then proceeded to commit great devastation, and actually defeated a body of troops sent against him. After which, he re-embarked, and sailed for Bergen in Norway.

On their return to France, de Forbin and Jean Bart repaired to Versailles, where the latter was for the first time introduced to Louis the XIVth, who had expressed the liveliest curiosity to see him. "Look at the Chevalier de Forbin leading his Bear," said the courtiers, as they passed along the gallery. On the day of his presentation, Jean Bart repaired to the palace at daybreak. Knowing no one there, and a feeling of ennui coming over him, he lighted his pipe, and proceeded to solace himself by smoking: the attendants of the court were, as it may well be imagined, *consterne's* at such presumption, and the guards were for turning him out: but on being told that no one was allowed to smoke under the royal roof, he coolly rejoined, that it was a habit he had acquired in the service of his royal master, one that had become to him a second nature, and that he was confident his majesty possessed too much generosity to prevent him indulging himself even there; and he continued smoking. When Louis was informed that there was a man who had the audacity to smoke in the ante-chamber, "I'd lay my life," said the king, "that it is Jean Bart; let him do as he pleases." When he was at length introduced, his majesty received him most courteously, and said to him, "Jean Bart, you are the only person permitted to smoke where I reside; I also make you a chef d'Escadre." "Sire, you have done well," replied the seaman; an answer that elicited a burst of laughter from the assembled courtiers; but the king checked them by saying, "You have not understood Jean Bart; his answer is that of a man who feels what he is worth, and who is anxious to give me new proofs of it." The king then inquired how he had managed to get out of Dunkirk with his little squadron, while so closely blockaded by an enemy's fleet. "With the assistance, sire, of those gentlemen, (pointing to the courtiers whom he had observed laughing at him,) I will presently shew your majesty." Placing them accordingly in two rows, he began imitating a ship under sail; and dashing in between them, he cried out, "Starboard guns, fire;" and down he knocked a courtier—"Larboard guns, fire," and down went another;—and thus he went on till he had floored them every one in succession, to the infinite delight of the king, and the great mortification of the courtly actors, who were not accustomed to such rough work. Louis presented him with an order for 1000 crowns on the royal treasury. The person on whom the order was drawn was one Peter Gruin, who lived in a remote corner of the capital. To his residence he accordingly repaired, and, stalking into an apartment where he was at dinner with some of his friends called out, "Which of you is Peter Gruin?" "I," answered the Sieur Peter, "am called Monsieur Gruin." "Then pay me that," exclaimed Bart, shewing him the order on the treasury. Gruin took the paper, and carelessly perusing it, flung it behind him, and said, "Call again in a day or two." Jean Bart, who did not understand such dilatory proceedings, deliberately drew his sabre, and calmly said, "Take up that paper, and pay me this instant:" the terrified Gruin stared aghast, and, taking up the paper, motioned Bart to follow him to his counting-house, where he would pay him. Here he took up some bags of silver, and proceeded to weigh them; upon which Jean

Bart cried out, "Do you take me for a mule? give me gold;" and gold, it is needless to say, he got from the terrified cashier." But by far the most singular anecdote related of this extraordinary man, is the following:—Louis the XIVth was so amused with his blunt manners, that he gave orders for him to be admitted to his presence whenever he made his appearance. On one occasion, when Jean Bart was returning from an audience, the queen was looking over the balcony into the garden. Seeing a lady in that position, Jean Bart could not resist the temptation of saluting her with a vigorous slap upon a part, where, in our sex, honour is said to hold her court. The lady in a rage turned round, and discovered to the audacious offender the countenance of the queen: the conjuncture was a delicate one, but Jean Bart by his ready wit got out of the scrape. "Ah, Madame," he exclaimed, throwing himself on his knees, "Si votre cœur est aussi dur que votre derriere c'en est fait de moi." The queen was so struck with the oddness of this address, that she forgave him.

It was during Jean Bart's stay at court, that the battle of La Hogue, so fatal to the naval power of France, was fought. On his return to Dunkirk, he found it closely blockaded by the enemy. However, the daring mind of our hero again found means to pass through the enemy's line with three frigates; the Comte of forty-four, the Hercule of thirty-six, and the Tigre, also of thirty-six guns. On the following day, he captured four English ships richly laden, bound for Russia; and a few days afterwards he captured and destroyed a fleet of eighty-seven sail, of the same nation; he then made a descent near Newcastle, and burnt upwards of five hundred houses, and succeeded in getting safe back into Dunkirk. Having refitted his squadron, he sailed for the North Sea, where he destroyed a number of merchant vessels. As the season was advancing, he determined to regain the port of Dunkirk; but having spoken a Danish ship, the commander of which informed him that he had just before parted with a Dutch fleet from the Baltic, under convoy of a ship of fifty-four guns, one of thirty-six, and another of twenty-four; he sailed in pursuit of them, and coming up with the hindmost, which was the fifty-four, he boarded her. The Hercule and the Tigre did the same with her two consorts, and captured them; but the large ship made so vigorous a defence, that Jean Bart, after boarding three times, was beaten off, and she escaped, leaving the whole of the fleet in the hands of the French.

About this time there was a great scarcity of grain in France; in the northern parts of Europe there were upwards of three hundred vessels laden with corn, but blocked up by the frost. In spite of the vigilance of the English, who were blockading Dunkirk, Jean Bart succeeded in convoying in a whole fleet. He then sailed again, in June, 1694, to escort upwards of one hundred and thirty corn vessels that had at length succeeded in getting out, but the whole of which were intercepted by the Dutch squadron under the command of Admiral Hide de Fries. On the 29th of the same month, Jean Bart received intelligence of this event, and, further, that the enemy's squadron were not more than fifteen leagues in the offing. In this important conjuncture, the intrepid Jean Bart, consulting only the dictates of his bravery and patriotism, thus addressed his officers: "Notwithstanding the superiority of force, we must bring the enemy to action, for the interests of France imperatively demand it;" and he ordered them to crowd all sail. When nearly under the muzzles of the Dutch guns, he cried out, "Now, my friends, it is the cutlas that must decide it—no long shots." He then ran alongside the Dutch admiral, and, having reserved his broadside, laid him on board. Hide de Fries was a man of gigantic stature and undaunted courage, and on this occasion he shewed a noble example to his men. Jean Bart, eager to close with so gallant an enemy, rushed upon him with his sabre, and a furious combat ensued between them; but Jean Bart, having wounded his adversary in the breast with a pistol-shot, and having also inflicted several severe cuts on his head, succeeded at length in stretching him dead at his feet. As the French gave no quarter, the carnage was immense. Three of the enemy's ships were captured, and the remainder made off in the greatest consternation. Jean Bart, having inspected the vessels laden with corn, carried them with his prizes into the French ports, where he was received with the most enthusiastic admiration. Corn, which at that period was as high as thirty livres the bushel, immediately fell to three. Joy and plenty was diffused through the land; and, in order to commemorate the great triumph, Louis ordered a medal to be struck, the design representing a ship in the offing, with *Ceres* on the shore, holding in her hand some ears of corn. The inscription was on one side—

ANNONA AUGUSTA,

on the other—

FUGATES AUT CAPTIL,
BATAVORUM NAVIBUS,
MDC.XCIV.

Shortly afterwards, the king honoured him with "lettres de noblesse."

In 1697 he was appointed Commodore, and ordered to equip for sea a squadron of seven ships of war lying in the port of Dunkirk. This fleet was intended to convey the Prince de Conti to Poland, one of the candidates to the throne of that kingdom, on the demise of the celebrated John Sobieski. The prince sailed from Dunkirk on the evening of the 6th of September, with a numerous suite. On the 7th they were off Ostend, and, continuing their course all night, ran through nineteen of the enemy's ships-of-war that were cruising to intercept them. At dawn they fell in with eleven others; but Jean Bart, having cleared for action, held on steadily his course. When the danger was passed, the prince asked him whether, in the event of their having been attacked, they would not have been taken? "No;" coolly replied Jean Bart, "the thing was impossible." "But what could you have done?" inquired the Prince. "Why, sooner than have hauled down my colours, I would have blown up the ship; my son was posted in the magazine, only waiting for me to give the signal."* The Prince, petrified at such an intimation, replied, in great agitation, "Sir, the remedy is worse than the disease; and I request it may never be practised while I am on board."

At the peace of Riswick, Jean Bart went into retirement. Compared with the dawn and meridian height of his career, that blazed forth with all the lurid wrath and fiery splendour of a tropical sun, its close was tranquil as expiring day—"that in summer's twilight weeps itself away." His last days were passed in the bosom of domestic happiness, until he was prematurely cut off by a pleurisy, in the year 1702, just as the war of the Spanish succession was opening so wide a field to his skill and gallantry.

Jean Bart was tall and finely proportioned, and possessed an iron vigour of frame, that wonderfully fitted him for the profession of arms. His countenance was open and expressive; with large blue eyes, and a profusion of light hair. His manner was frank and unassuming. His understanding vigorous, but uncultivated. De Forbin says, he was so illiterate that he could neither read nor write, and that he was totally incapable of planning any great enterprise:—the latter part of the assertion, the page of history will controvert; but, imperfect as may have been the intellectual culture of this extraordinary man, he eminently possessed every quality requisite to form a brave and skilful seaman: his courage was of the highest order, and rendered him the terror of the Dutch, the Spaniards, and the English. But, of all his foes, Bart awarded the meed of gallantry to the latter: "Give me a Briton," he would say, "there is some glory in beating such an enemy: but for your Dutchman, he will never come on, unless double your strength; while an Englishman will always engage you, without calculating the odds against him."

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* On going into action, he gave the following orders to his son, Jean, a youngster of fourteen—"Jean, as I am resolved never to strike to a Dutchman, take post in the powder magazine; and should the affair, my lad, go against us, remember, I shall fire my pistol down the gangway, when you must immediately fire the train, and blow us all up." "So I will, father," replied the undaunted youth, and took his post. After the action, Jean Bart, accompanied by his officers, repaired to the powder room, to see if his son was at his post; who, on seeing his father, said, "The danger is passed, then? so I may put out the candle."

IV.—THE FALKLAND ISLANDS—SOUTH SEA ROOKERIES: *Morrell's Voyages.*

THE Falkland Islands form a group or cluster in the South Atlantic Ocean, about eighty leagues east from Cape Virgin, on the Straits of Magellan, extending north and south from lat. 50° 58′ to 52° 46′ S., and east and west from long. 57° 32′ to 61° 29′ W. They were first seen in 1592, by Captain Davis, who sailed under the command of Sir Thomas Cavendish, and two years afterward by Sir Richard Hawkins. They were afterward successively seen by other navigators, such as Dampier, Cowley, Strong, &c. The latter gave them their present name, in honour of Viscount Falkland.

There is no appearance whatever of these islands having ever been inhabited previous to their discovery by Europeans; and the navigators who first landed on their shores found the animals so totally unacquainted with man, that the birds suffered themselves to be taken by the hand, and even settled upon the heads of the people.

The first attempt at settling these islands was made by the French, after losing Canada, in 1763, who selected them as a place of shelter and refreshment for vessels bound to the South Seas. For this purpose, they established a little colony on the eastern island, at Berkley Sound, which they denominated the Bay of Acheron. Two years afterward, the British took possession of these islands, and settled a colony in Port Egmont. But neither attempt succeeded. The French ceded their settlement to the Spaniards in 1767; and the English abandoned theirs, as useless, in 1774. The whole country is now claimed by the government of Buenos Ayres, of whom it might be purchased on advantageous terms.

It is my opinion that something might be made of this country. The soil is good, clear of rocks, and susceptible of easy tillage and high cultivation. Luxuriant meadows, or plains, in the interior, afford excellent grazing for cattle all the year round. I have killed wild cattle in Falkland Sound that produced from sixty to seventy pounds of rough tallow; and the extensive grassy plains abound with some of the finest wild horses in the world. Though destitute of trees, there is no want of fuel, the low grounds producing an abundance of excellent peat, or turf, which burns well.

The climate is temperate and salubrious, free from the extremes of heat or cold, though subject to frequent rains and stormy winds. The soil is everywhere well watered by running streams, which are never frozen; and the ice on the lakes is seldom sufficiently strong to sustain the weight of a man. There are numerous excellent and commodious harbours, and fresh water, of a good quality, in any quantities desired. Wood, however, cannot be obtained at any of them, except it be drift-wood. Each of the islands abounds with wild horses, cattle, hogs, foxes, rabbits, geese, teal, ducks, rooks, nellies, albatross, mollymois, petrel, penguins, and shags; besides a variety of land birds. Some fine sea-elephants, together with fur and hair-seal, are found on the shores, and a variety of scale-fish may be taken from the waters.

There is a tall grass grows here, and tussacks, or flag-grass, brushwood, and shrubs, some of which bear berries of a pleasant acid flavour; also celery, cresses, sorrel, and a plant which some call the tea-plant, as it makes an excellent beverage of a similar flavour. There is another vegetable called sappinette, or the varnish plant; it has the appearance of a green hillock, rising about three feet above the surface of the ground, and there exudes from it a resinous substance, which in flavour and odour resembles gum-ammoniac.

The feathered tribes are very numerous on these lonely isles of the southern hemisphere, both in the South Seas and in the South Pacific Ocean. Of penguins there are four kinds which resort to the Falkland Islands, viz. the king penguin, the macaroni, the jackass, and the rookery. The first of these is much larger than a goose; the other three are smaller, differing in appearance in several particulars. They all walk upright, as their legs project from their bodies in the same direction with their tails; and when fifty or more of them are moving in file, they appear at a distance like a company of juvenile soldiers. They carry their heads high, with their wings drooping like two arms. As the feathers on the breast are delicately white, with a line of black running across the crop, they have been aptly compared, when seen at a little distance, to a company of children with white aprons tied round their waists with black strings. This feathered animal may be said to combine the qualities of men, fishes, and fowls: upright like the first; their wings and feet acting the part of fins, like the second; and furnished with bills and feathers, like the third. Their gait on land, however, is very awkward, more so than that of a jack-tar just landed from a long voyage, their legs not being much better adapted for walking than their wings are for flying.

The next most remarkable bird to be found on these shores is the penguin's intimate associate and most particular friend, the albatross. This is one of the largest and most formidable of the South Sea birds, being of the gull kind, and taking its prey upon the wing. Like many other oceanic birds, the albatross never comes on land, except for the purpose of breeding; when the attachment that exists between it and the penguin is evinced in many remarkable instances, indeed it seems as firm as any that can be formed by the sincerest friends. Their nests are constructed with great uniformity near to each other, that of the albatross being always in the centre of a little square formed by the nests of four penguins.

Another sea-fowl peculiar to these islands is called the upland-goose, and is about the size of our domestic geese, very palatable when cooked, being sweet, tender, and juicy. Their plumage is rich and glossy; that of the gander a dazzling white, his bill being short and black, and his feet yellow. The edges of the feathers which cover his breast and neck are black. The down is nearly equal to that of the swan, and would make beautiful trimming for ladies' dresses. But the down of the albatross is superior to any thing of the kind that I have ever seen, though that of the shag approaches the nearest to it in quality. If any method could be invented to divest it of that disagreeable fishy odour peculiar to all oceanic birds, it would be the most valuable down ever brought to this country, and I believe that their feathers might be made equally as valuable as geese feathers.

The teal is likewise found here, and far surpassing in beauty those of this country. Their bills and feet are blue; their wings of a golden green; and the plumage of their bodies more brilliant and shining than that of the pintado. The ducks are similar to those of our own country. There is also a goose here, called the lowland-goose, which somewhat resembles our tame geese. The males are of a variegated hue, a kind of mixture of white and dark grey, chiefly white. The females are mostly grey, and resemble the brant of the United States. They are not quite so large as our geese, and feed on shellfish and rock kelp, which gives their flesh a very unpleasant flavour.

Oct. 19.—On the day after our arrival at New Island, all hands were set to work, in the discharge of their peculiar and various duties. A part of the crew were engaged in refitting the schooner, by repairing her sails, rigging, &c. Another part were occupied in filling water; and the remainder were employed in gathering eggs from the rookeries on the back side of the island. As the latter process is not destitute of interest, I shall take this opportunity to make the reader better acquainted with a South Sea rookery, which is certainly a great curiosity. Indeed I know of few peculiarities in the history of animated nature that are better calculated to lead a reflecting mind to a serious contemplation of the merciful economy of Providence, in his government of the creatures to which he has given existence, than the one now under consideration.

When a sufficient number of penguins, albatross, &c., are assembled on the shore, after a deliberate consultation on the subject, they proceed to the execution of the grand purpose for which they left their favourite element. In the first place, they carefully select a level piece of ground, of suitable extent, often comprising four or five acres, and as near the water as practicable;

always preferring that which is the least encumbered with stones, and other hard substances, with which it would be dangerous to have their eggs come in contact. As soon as they are satisfied on this point, they proceed to lay out the plan of their projected encampment; which task they commence by tracing a well-defined parallelogram of sufficient magnitude to accommodate the whole fraternity, say from one to five acres. One side of this square runs parallel with the water's edge, and is always left open for egress and regress; the other three sides are differently arranged.

These industrious feathered labourers next proceed to clear all the ground within the square from obstructions of every kind, picking up the stones in their bills, and carefully depositing them outside of the lines before mentioned, until they sometimes, by this means, create quite a little wall on three sides of the rookery. Within this range of stones and rubbish they form a pathway, six or eight feet in width, and as smooth as any of the paved or gravelled walks in the New-York Park, or on the Battery. This path is for a general promenade by day, and for the sentinels to patrol at night.

Having thus finished their little works of defence on the three land-sides, they next lay out the whole area in little squares of equal sizes, formed by narrow paths which cross each other at right angles, and which are also made very smooth. At each intersection of these paths an albatross constructs her nest, while in the centre of each little square is a penguin's nest; so that each albatross is surrounded by four penguins, and each penguin has an albatross for its neighbour in four directions. In this regular manner is the whole area occupied by these feathered sojourners of different species, leaving, at convenient distances, accommodations for some other kinds of oceanic birds, such as the shag, or green cormorant, and another which the seamen call Nelly.

Although the penguin and the albatross are on such intimate terms, and appear to be so affectionately and sincerely attached to each other, they not only form their nests in a very different manner, but the penguin will even rob her friend's nest whenever she has an opportunity. The penguin's nest is merely a slight excavation in the earth, just deep enough to prevent her single egg rolling from its primitive position; while the albatross throws up a little mound of earth, grass, and shells, eight or ten inches high, and about the size of a water-bucket, on the summit of which she forms her nest, and thus *looks down* upon her nearest neighbours and best friends.

None of the nests in these rookeries are ever left unoccupied for a single moment, until the eggs are hatched and the young ones old enough to take care of themselves. The male goes to sea in search of food, until his hunger is appeased; he then promptly returns, and affectionately takes the place of his mate, while she resorts to the same element for the like purpose. In the interchange of these kind offices, they so contrive it as not to leave the eggs uncovered at all; the present incumbent (say the female) making room for the partner of her cares and pleasures on his return from the sea, while he nestles in by her side until the eggs are completely covered by his feathers. By this precaution they prevent their eggs being stolen by the other birds, which would be the case were they left exposed; for the females are so ambitious of producing a large family at once, that they rob each other whenever they have an opportunity. Similar depredations are also committed by a bird called the rook, which is equally mischievous as the monkey. The royal penguin is generally foremost in felonies of this description, and never neglects an opportunity of robbing a neighbour. Indeed it often happens, that when the period of incubation is terminated, the young brood will consist of three or four different kinds of birds in one nest. This is strong circumstantial evidence that the parent bird is not more honest than her neighbours.

To stand at a little distance, and observe the movements of the birds in these rookeries, is not only amusing, but edifying, and even affecting. The spectacle is truly worthy the contemplation of a philosophic mind. You will see them marching round the encampment in the outside path, or public promenade, in pairs, or in squads of four, six, or eight, forcibly reminding you of officers and subalterns on a parade-day. At the same time, the camp, or rookery, is in continual motion; some penguins passing through the different paths, or alleys, on their return from an aquatic excursion, eager to caress their mates, after a temporary absence; while the latter are passing out, in their turn, in quest of refreshment and recreation. At the same time, the air is almost darkened by an immense number of the albatross hovering over the rookery like a dense cloud, some continually lighting and meeting their companions, while others are constantly rising and shaping their course for the sea.

To see these creatures of the ocean so faithfully discharge the various duties assigned them by the great Creator; to witness their affectionate meetings after a short absence on their natural element; to observe their numerous little acts of tenderness and courtesy to each other: all this, and much more that might be mentioned, is truly interesting and affecting to the contemplative and sympathetic spectator. I have observed them for hours together, and could not help thinking, that if there was only as much order, harmony, and genuine affection between wedded pairs of the human race as there is among these feathered people, the connubial state would then indeed be "all that we dream of heaven." A moral philosopher could not, perhaps, be more usefully employed for a few days than in contemplating the movements and operations of a South Sea rookery, and marking the almost incredible order and regularity with which every thing is performed. Such a spectator could not fail to confess, that so wonderful an instinct must be "the Divinity which stirs within" them.

V.—STEAM-ENGINES IN THE MINES OF CORNWALL.

To the Editor of the Nautical Magazine.

SIR—The following table was intended for insertion, as part of my letter which appeared in your June number, and the first sentence refers to it alone :

PARTICULARS.	Wheal Towan. Druce's Engine.	Consolidated Mines. Job's or Maria Engine.	Perran Foundry Waldersey Drainage.	Rhadamanthus Each Engine.
Cylinder, in inches . .	80	90	40	55.
Stroke of Piston . . .	10	10	8	5 × 2 = 10.
Load on ditto, in lbs. .	55,869 lbs.	77,568	——	——
No. of Strokes per minute	6¾	5⅓	10½	34 ÷ 17 Revolutions.
Steam cut off at . . .	3/10	⅓	¼	——
Depth of Pump Rods .	162 fathoms	135 fathoms	14 feet	——
Length of Boilers . .	35	34	24	——
No. of Do. . . .	2	3	2	——
Steam above atmos. per hr.	35 lbs.	27 lbs.	16 lbs.	4 lbs.
Diameter	Not mentnd.	6 ft. 6 in.	5 ft. 9 in.	——
24 Hours' Coal . . .	62 Bushels	76 Bushels	——	300 Bush.
1 Hour's Do. . . .	2 7/12	3⅙	1	12½
	April	Average	Average	——
Duty	76,806,115	53,000,000	75,000,000	——

The above account was supplied by the engineers of the mines in which the engines are at work, and the account of the Waldersey Drainage came from Perran Foundry: this engine works only from six to ten hours per day. The Maria Engine is twelve years old, and was selected, because it is the *first* 90-*inch cylinder* ever erected.

I have assumed each revolution as one stroke of ten feet, in the Rhadamanthus, for the convenience of comparison. In the Cornish engines, which are single acting, the piston consumes more than double the time when at rest at the end of the stroke, and in its return, than in its acting stroke; this period is about 11 seconds in Job's engine, and may, perhaps, be divided—

Acting stroke . . .	3½ seconds.	
Rest	3 ——	ample time for a good condensation.
Return	4½ ——	

The weight of the working-beam, or bob, (as it is called in the mines,) of this engine, is, I believe, about 29 tons. I know it is 26 tons in a new 80-inch cylinder; and, at Poldri, the 91-inch cylinder has a bob of 33 tons, 16 tons in each cast-iron plate, and 1 ton of wrought-iron connections. This may give some idea of the size of the engines. The vessels to which circular boiler, expansive steam, and partial clothing, have been applied, are, the Echo government steamer, and Cornubia private vessel. To Captain King, of the Astræa, who is in command of the foreign packets at Falmouth, is due the merit of first proposing the application to steamers, of the successful improvements adopted in the mines.

His attention was called to this subject on observing the inefficiency of the steamers first supplied for the packet service; and, in consequence of his suggestions, which were sent to the Admiralty in February, 1830, I believe the Echo was ordered to be fitted, as far as was practicable, with her old engines. The quantity of coal consumed, I have heard, was much lessened. She has blockaded Oporto this winter.

The Cornubia was built at Greenock for Mr. Ward, and fitted up by him on the same principle, with some improvements proposed by himself. I understand a Glasgow steamer has adopted the alterations of boilers, &c. of the Cornubia, and that her speed has been greatly augmented, and a considerable saving of coal effected at the same time.

The object of my former letter was to point out, that the publication of a comparative statement of the duty performed by steamboat engines would, perhaps, lead to more important results than were anticipated by Mr. Chatfield. The form of that report ought to be arranged by the engine-makers, if ever adopted, as by its decision their respective merits must be determined.

The most essential point is the column of duty, to enable steamboat proprietors to judge of the quality of their engines, and the care and attention employed in their management. Few steamers would then attempt to race with each other. If the engine was forced, a decrease of duty would be apparent in their next report. This occurs in the mines whenever an engine is obliged to draw more than her share of water, in consequence of accidents. A load too light is likewise incompatible with a high duty.

The following statement of the comparative performance of the Cornish engines at different periods, will point out the unfairness of the account in my former letter, which was occasioned by the comparison of the ten best engines with the worst, in 1811:

		Millions lbs. of Water lifted 1 foot, per Bushel of Coals.
1811.	In August, 9 engines on trial averaged . .	13,500,000
1813.	First report by Messrs. Lean, 24 engines do. .	19,456,000

The improved duty may be almost entirely attributed to the greater care in keeping the packing of the piston in good order, and the more regular supply of grease. It justified the suspicion, that many engines had previously not performed an adequate duty.

1818.	In 32 engines, average	25,433,783
1823.	— 32 do. ———	28,156,163
1828.	— 54 do. ———	37,000,000
1833.	If the present rate continues, perhaps	45,000,000

The average duty of the year 1813 is not half that of the present year. By taking the best of that year, as compared with Borlase's engine *Wheal Vor*, the difference is still greater.

1813. Average of the highest, about	27,000,000
1832-3. Do. Wheal Vor, highest about	84,000,000
This engine one month reached	91,000,000
Watt's engines, 40 years since, sometimes reached	20,000,000

But the performance of the engines not being brought before the public in such a form that their relative work could be seen on the inspection of a comparative statement, the efforts of the engineers were not always supported by all the adventurers; and in many instances very little attention or care was employed in the management of the engines.

The test adopted in the mines is considered a sufficient comparative statement of engines similarly situated, and to it the engineers must submit, or be prepared to prove its incorrectness under a severe scrutiny. Accurate trials have been made of old engines, whose reported rate of duty has suddenly increased, or of new engines, on their performance of an unusually high duty.

JOHN S. ENYS.

Enys, 8th June, 1833.

VI.—NUBIA AND ABYSSINIA: *comprehending their Civil History, Antiquities, Arts, Religion, Literature and Natural History, by the* REV. MICHAEL RUSSELL, LL.D.

WITH the same skill, judgment, and good taste, that have signalized the preceding volumes of their work, the Editors of the Edinburgh Cabinet Library have produced another interesting volume, containing the History of Nubia and Abyssinia, or, as it was termed, Ethiopia above Egypt. What a field for the pursuits of the historian and antiquarian does this part of the world present, and to what a remote period in the course of time is the mind conveyed, in contemplating the relics of a people, among whom the arts are supposed to have flourished even before the great events of the world were recorded in sacred history!

We must not allow ourselves to touch the vast question respecting the early population of this country; the similarity of the Abyssinian and Indian Temples; the various wars in modern times, made by the Egyptians on the Nubians and Abyssinians, for the sake of gold, conquest, and revenge; or the progress of religion in those countries, and the various civil wars between princes and their subjects which this produced. Such interesting topics we must leave, as not belonging to us here. We must content ourselves with giving our readers a sample of the work before us, and we will do so in an extract relating to the manners and customs of the people. The following practice in Abyssinia, on the administration of justice, will suit our purpose:

"It is well known that the royal standard of Abyssinia displays the lion of the tribe of Judah, to indicate the descent of its kings from Solomon; a fiction, it may be presumed, by which the clergy flattered the vanity of the monarch, and preserved the relic of a custom older than Christianity. In the fair season of the year his majesty was always in the field. The form of the camp was so established by ancient usage, that in every place it assumed the same appearance, and regular order. It is said that even their palaces and towns were modelled according to the plan which was followed in the distribution of the tents. The household was very numerous, and the members of it were distinguished by badges which indicated their respective stations.

"A little removed from the royal pavilion or station was a large square tent, with six seats on either side, and one at the end, higher than the others, which indicated the presence of the king. This was the hall of justice, where causes were heard, and whence the opinion of the judges was conveyed to his majesty, who, from a concealed recess, or alcove, expressed his concurrence or dissent. Before proceeding to business in that court, or Saccala, as it was termed, the official persons pronounced a prayer, and then chanted the following sentences:—

'From the day of vengeance; from the day of doom,
How shall the soul escape?
When the mother cannot save her child, and the earth
shall surrender her prisoners,
How shall the soul escape?
When the assembly shall accuse us with terrors; when our
deeds shall be opened and spread out, and all that we have done
shall be read,
How shall the soul escape?
When our Lord shall sit on the Mount of Olives, on the day
of the Sabbath, and all his disciples beside him,
How shall the soul escape?'

With such holy exercise the assessors of the Abyssinian monarch were wont to prepare themselves for the solemn duty of awarding justice between man and man; and in all cases, where the immediate interests of the crown were not concerned, the path of equity is said to have been followed with no small degree of self-denial and steadiness."

We may also add the following of the Zackary, an extraordinary race of people, dwelling principally in the province of Tigrè, in Abyssinia, towards the Red Sea:

"One of the most annoying of their superstitions is the belief or affectation of being possessed with a certain kind of evil spirit, which cannot be expelled in any other way than by music and dancing. This complaint is called *tigrè-ter*' and is more common among women than among men. It seizes the body as if with a violent fever, then turns to a lingering sickness, which, unless the proper remedy can be procured, often reduces the patient to the greatest extremity. During the paroxysm, the speech is changed to a kind of stammering, which no one can understand but those who have been afflicted with the same disorder. When the relatives find the malady established, they join together to defray the expenses of curing it; the first step towards which is to procure the assistance of a learned dofter or priest, who reads the Gospel of St. John, and drenches the sufferer with cold water for the space of seven days—an application that very often proves fatal. A more effectual remedy is found to consist in a band of trumpeters, drummers, and fifers, a full supply of liquor, and an assemblage of juvenile personages to enjoy these means of hilarity.

"Pearce once saw a young woman who had the misfortune to be afflicted with this disorder; and as she was the wife of an intimate friend, he visited her very frequently. Her voice was so much affected, that she could not be understood by her nearest relations; and it was observed, that the sight of a book or a priest threw her into great agony, during which a torrent of tears, like blood mingled with water, flowed from her eyes. After allowing her to linger three months in this miserable condition, the husband resolved to employ the wonted remedy, however expensive and inconvenient to him. For this purpose he collected a band of music, and likewise borrowed from all his neighbours their silver ornaments, with which to load her arms, legs, and neck.

"The evening this singular experiment was tried, our countryman attended, to give his assistance. About two minutes after the trumpets commenced, he observed her shoulders begin to move, and soon afterwards her head and breast, and in less than a quarter of an hour she sat up on the couch. The wild look she had, though she occasionally smiled, made him withdraw to a greater distance, being alarmed to see a person reduced almost to a skeleton exert such strength; her head, neck, shoulders, hands, and feet, all moved to the sound of the instruments, and in this manner she proceeded for some time, till at length she started up, and stood on the floor. Afterwards she began to dance and to jump about, and at last, as the music and noise of the singers increased, she often sprang three feet from the ground. When the band slackened she appeared quite out of temper, but when it became louder she smiled and was delighted. During this violent exercise she never showed the least symptom of being tired, though the musicians were thoroughly exhausted; and whenever they stopped, to take a little rest, she manifested signs of the utmost discontent and impatience.

"Next day, according to the prescribed method in the cure of this disorder, she was taken to the market-place, where several jars of maize were provided for the respective performers. When the crowd had assembled, and the music was ready, she advanced into the centre, where she began to dance, and throw herself into the maddest postures imaginable, and continued to exert herself in the same manner throughout the whole day. Towards evening, she was seen to drop the silver ornaments from her neck, arms, and legs, one at a time, so that in the course of three hours she had stripped herself of every article. As the sun went down, she made a start with such swiftness that the fastest runner could not keep pace with her; and when at the distance of about two hundred yards, she fell to the ground on a sudden, as if she had been shot. Soon afterwards a young man fired a matchlock over her body, struck her on the back with the side of his large knife, and asked her name, to which she answered as when in the possession of her senses; a sure proof that the cure was accomplished, for during this malady, those afflicted with it never answer to their christian name. She was now taken up in a very weak condition, and carried home; and a priest came and baptized her again, as if she had just come into the world, or assumed a new nature.

Mr. Pearce had soon afterwards a less agreeable opportunity of becoming acquainted with the characteristics of this strange disease. His own wife was seized with some of the most alarming symptoms; but having a strong suspicion that this ailment sprang from the weak minds of women, who were gratified with the display, the rich dresses, and music, which accompany the cure, he determined not to yield to her fancy. He thought the application of a whip might be attended with a good effect, and actually had recourse to a few strokes, when there was no one present to witness the proceeding. But what was his surprise, when, instead of profiting by his skill, she appeared like a corpse, her joints stiffened, and life seemed to become extinct. Alarmed and grieved at the want of success, he immediately consented to pay for the band, the drink, and the other apparatus used in similar cases; and the result proved a complete reward for his connubial affection. "One day," says he, "I went privately with a companion to see my wife dance, and kept at a short distance, as I was ashamed to go near the crowd. On looking stedfastly upon her, while dancing and jumping, more like a deer than a human being, I said that it was certainly not my wife; at which my companion burst into a fit of laughter, from which he could scarcely refrain all the way home.'*

There is little doubt that on some occasions there was fraud mixed up with Abyssinian superstition. Pearce, whose mind was possessed with all the incredulity of a Protestant, was constantly endeavouring to obtain a peep behind the scenes; and, in one instance at least, he was completely successful. At an excavated church near Adowa there is a picture of the Virgin suckling her Child, painted probably in the time of the Portuguese, as the workmanship differs materially from that of the native artists. It is placed in a window, adjoining which is a dark recess; and the priests told the Ras and the chiefs who were with him, that when any sinful person looked at it, the figures trembled violently. As Pearce himself witnessed the agitation of the picture when some individual, not remarkable for purity, happened to fix his eyes on it, he looked about to discover whether there were any secret entrance by which one might get to the back of it, and soon observed a monk crawling out of a very small opening in an obscure place. Accordingly, when the attention of the bystanders was otherwise employed, the sceptical sailor crept in, and, after turning round a dark corner, he saw a priest behind the canvass, shaking it every now and then with a piece of string. He did not presume to interrupt him, but, being satisfied with his discovery, retired from the scene of imposture. He did not forget, however, to tell Welled Selassé at a convenient season, who said he believed it; but added, 'It will not do to quarrel with these rascals, for if I were to set them against me, I should not long be Ras.'"†

The natural history of Nubia and Abyssinia is also ably treated on, and the subject of zoology is illustrated with beautifully-executed wood-cuts. For a general view of the whole history of this most interesting part of the world, the reader will be well pleased with the volume before us. It is the production of a well-informed and elegant writer.

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* Life and Adventures, vol. i. p. 291.

† Life and Adventures, vol. i. p. 176.

VII.—ADMIRALTY COURT DECISIONS.

As the usual ceremony of accepting the office of Judge of the High Court of Admiralty may be new to some of our readers, we take this opportunity of inserting the following from the "Times."

Admiralty Court, May, 31.

The Right Hon. Sir John Nichol, the new Judge of this Court, entered the hall in the customary form, preceded by the Deputy Marshal (Mr. Deacon) bearing the silver oar. On taking his seat,

The Admiralty Advocate (Dr. Dodson,) having the patent of appointment in his hands, addressed Sir John in a short and appropriate speech, requesting him to take upon himself the office of Judge of this court, adverting to the distinguished ability with which he had fulfilled the duties of King's Advocate and Judge of the Prerogative and Arches Courts, and offering to the learned judge his humble congratulations upon the appointment for which he had been so deservedly selected.—The letters-patent were then read by the registrar.

Sir John Nicholl then said, "In obedience to His Majesty's gracious appointment, contained in the letters-patent which have just been read, I humbly, and with deference and respect, accept the office of Judge of the High Court of Admiralty of England, and am ready to take the oaths which are usual on the occasion." The oaths of office, abjuration and allegiance, were then administered to the Judge by the registrar.—The only business transacted was, the appointment of surrogates and formal assignations.

By the following extract from an old work, it would appear that formerly the office of Judge of the High Court of Admiralty of England, was performed by the Warden of the Cinque Ports.

" *Warden*, now commonly styled, the *Lord Warden*, because oftentimes the wardens have been of the nobility, and sometimes princes of the blood-royal. It is an office none less than a knight ought to occupy. This great officer, or *Limenarcha*, as Camden observes, was an imitation of the same officer, which the Romans* established for defence of our coasts, and called *Litoris Saxonici*, or, *Tractus Maritimi Comes*, who had the charge of nine sea-ports. And it is no doubt but these cinque ports and towns were under some special government in the time of the Saxons, necessity so requiring; though *guardian*, (from whence *warden*, in plain English, *keeper*, and in Latin *custos*) imports the name imposed by William the Conqueror. Yet may it not thence be concluded that the office was born with him, seeing his design was to have altered the whole language he found here, by injoyning the teaching here of his own French tongue to children, the grammar in schools, the laws and pleadings thereof in this tongue, shortly after his settlement on the throne.

" These wardens therefore, being set for the defence of the ports, and coasts on which they are, and as the chief commanders of their ships they were to furnish to sea, gave them as well the name of Admirals, in respect of their office as to the sea, as Wardens with reference to their care in keeping and preserving the liberties of the ports at land, both as mediators between their sovereigns and them, if differences should arise there; and as judges among them, and between them and others, to guard and defend them against the unjust encroachments of foreigners upon their rights and jurisdictions, and to determine such differences as might grow irreconcileable, (without an interposing power,) and correct the errors and irregularities in judgment as might happen among themselves: for as to the former, he is the immediate officer of the king to the ports, and hath the return of his writs that run there, they being directed to him; and as to the latter, the causes were heard, and judgment concerning them given, in the old court of *Shepway*, and courts of *Chancery* and *Admiralty*, which since frequented, have withdrawn to the latter most of the matters determinable in the former, and drawn too much obscurity thereon. That the Warden of the ports might have a place of residence near the ports, and a seat suitable to his quality, is the castle of *Dover* committed to his charge and custody, of which he is also entitled the *Constable*. And though I will not say, but anciently they might serve for titles of honour and office to several persons, yet, long since, the Constableship of *Dover Castle* and Wardenship of the *Cinque Ports* have both been conjoined in one person."

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* At least, under Constantine the Great, who did, amongst others, appoint such officers; and some say the office was executed under Valentinian by Nectaridius: *vid.* Selden's Mare Clausum.

No. V.

THE RELIANCE.—BOTTOMRY. JUNE 8.

This was an action on a bottomry-bond for £1,200, given to Messrs Gilmore and Co., of Calcutta, by Captain Hayes, master of the Reliance, which sailed in the latter end of 1827 on a voyage to Calcutta and back to London, the master carrying out a letter of credit for £1,000, on Gilmore and Co. On her arrival at Calcutta, however, the master, as contended, without the sanction, and even against the express directions, of the owners, instead of returning to London, engaged in a variety of speculations, in voyages between Calcutta, Arracan, the Mauritius, and Van Diemen's Land, in the course of which he became involved in a variety of complicated transactions and obligations towards Gilmore and Co. and others, and in the end gave them the bond in question; payment of which was resisted by the owners, on the ground that Gilmore and Co. were not entitled by law to avail themselves of this species of security, under the circumstances, and that the master, not the owners, was liable for the advances for which the bond was given.—The case was fully argued before Sir Christopher Robinson, the late judge of this court, and awaited his final judgment. It was, in consequence, re-argued by Dr. Addams and Dr. Matcham, for the owners; and the King's Advocate and Dr. Nicholl in support of the bond.

Sir John Nicholl said, that if he could be satisfied that the late judge of the court had fully and finally made up his mind as to any of the points of the case, he should be unwilling to revise his decision; but he could not find from the last minutes that the learned judge had fully and completely made up his mind on any one point. The master in this case had gone out on a voyage to Calcutta and back, with the authority and power of a master of a vessel, and nothing further: he had no discretionary power, but a limited credit for £1,000. He saw nothing in the evidence to authorize Messrs. Gilmore and Co., in conjunction with the master, to engage the vessel in different voyages, instead of its returning to London; of which obligation Gilmore and Co. were made acquainted by the contents of a letter from the owner to the master being communicated to them; yet they assisted him in different circuitous voyages between Mauritius, Arracan, Van Diemen's Land, and Calcutta; Gilmore and Co. receiving the freight, disposing of the cargo, and carrying the proceeds to a general account between them and the master. The question, therefore, was, not whether they had acted fraudulently, but whether they acted on the credit of the master, or on the credit of the owners. It would be a dangerous thing if a master in a distant part of the world was to be at liberty to keep the vessel out for years, contrary to the instructions of the owners, engage in voyages of mere speculation, and do acts which should bind his owners, and not only the owners, but the ship. It was only in extreme cases that the law allowed the master to bind the ship. The learned judge considered that Messrs. Gilmore and Co. had made the advances on the credit and responsibility of the master, and must take the consequences of so doing. It was impossible that they were not aware that he was acting without the authority of the owners; and, consequently, the learned judge was bound to pronounce against the bond, and to dismiss the freight. The owners were entitled to their costs.

VIII.—A Sailor's Advice to his Son,* on Entering the Royal Navy.

(Concluded from page 348.)

Letter IX.—*Conclusion.*

Having now endeavoured to direct your attention to those pursuits which I consider most likely to render you respected and happy in this life, and adapted to prepare you for a better hereafter, I will merely add a few concluding remarks.

That you will at present, or even at any future time, adopt all the occupations which I have pointed out to you, might be too much to expect; but at the same time I hope you will exert yourself to do so. The greatest probability is, that you will follow such of them as are adapted to your prevailing turn of mind, and your own peculiar capacity; and if I succeed in suitably directing you to those, I shall consider my care well repaid. My first object has been to render you a faithful servant to your Maker, and thereby an efficient officer to your king and country. My second has been to make you a worthy, agreeable, and accomplished member of private society; and the prevailing design of my observations has been to expose to you the futility of that once-fashionable opinion which would exclude naval officers from being capable of partaking of these advantages. The real truth is this, that if, in the early part of their career, their capacities have been assiduously cultivated, they possess means of subsequent improvement superior to the generality of men who enter the world; and if, on the contrary, they have been neglected in their youth, they are the more exposed to danger and deterioration.

In my seventh letter I have undesignedly omitted to notice the art of swimming, which is especially of equal importance with any exercise mentioned therein. The many instances in which this accomplishment may be made conducive to the most grateful reward of disinterested exertion which preserves the life of a fellow-creature at the risk of one's own, renders it highly valuable to every generous disposition. I could enumerate many signal instances of its utility in this respect, which have filled the surrounding spectators with delight, and carried inexpressible joy to every heart. I therefore earnestly recommend you to lose no opportunity of acquiring such a noble art on that account; even for the sake of your own preservation, the knowledge of it is indispensable. I have also omitted to notice several pursuits of a useful and interesting description in the circle of general science, which you will have ample opportunities of engaging in, to the advantage of yourself, as well as of those whose principal object it is to follow them. Of those pursuits, which may be considered to belong more immediately to your profession, perhaps the most important are, to acquire a knowledge of the shores, the depths, the temperature, and currents of the ocean, in all its parts, as often as opportunities will permit. It has been justly observed, that there is no class of society that has more frequent opportunities of adding to the general stock of scientific knowledge than that composed of persons in the royal and mercantile navies; and you will find, by referring to the article on this subject contained in numbers 4 and 6 of the Nautical Magazine, a little work which I have put into your hands, the various ways in which those opportunities may be turned to account. They have been so ably pointed out by the writer of the article in question, who is the author of a most valuable and popular little work*, which I equally recommend to your notice, that I will not extend the limits of this letter by dwelling on those subjects; I shall merely enjoin your attention to them. In visiting foreign places, let the reflection, that such another opportunity of collecting information relating to the part of the world you are in may never occur again, act as an incentive to you to seize the favourable moment, and turn it to a good account. If you should return there at any subsequent period, such information cannot fail to be of service to you; if you do not, you will have added so much to your general stock.

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* At the age of thirteen.

The great value of time in its unerring course will demand economy, and method, in employing with advantage that portion of it which, for some years to come, will be at your command. You must be already well aware, that TIME is far too precious to be trifled away in indolence or insignificant pursuits, and that a skilful arrangement of it will be the only mode by which you may lay in a store of knowledge in any of those subjects to which I have alluded. If you thus continue to fill up the intervals of leisure left from your duty with useful and regular occupations, you must not accustom yourself to entertain sanguine hopes as to the result of your application; for, although in our usual dependency on its operations, time past appears only fleeting, and time future to be tardy in its approach, the progress of both is really equal towards the final consummation of all things. Your anxiety will neither hasten its advance, nor will your indifference retard its departure; but by carefully and steadily freighting your little barque at every port in her varied course, you will gradually draw near the haven of eternity, with the revolving tide of time, deeply laden with the fruits of patience, experience, and wisdom. An illiterate and uncultivated mind is like a muddy and stagnant pool; but a quick, clear, and sure apprehension, resembles a pellucid stream, flowing over beds of precious ore, and blending their brilliant particles with its own pure and transparent quality.

I have directed your attention generally to the fountain-heads of information, in order that you may learn to think for yourself, and that you may not become insignificantly dependent on others for the guidance of your opinion and your conduct. I have the greatest respect for learning, and all its pre-eminent benefits; but when it fails to direct us in practice, it loses its value in my estimation. The most noble use you can make of it is to apply its comprehensive precepts to the regulation of your life in all the varied duties which they so fully develop, in the practice of what is good, honest, generous, humane, and obliging, towards your fellow-creatures. These duties it will enable you to perform in a more perfect and complete manner than if you had remained in ignorance. It is not merely from books that you will acquire this description of learning; you must study the source of that intelligence from whence books have their origin—man himself. The diversity of his species is infinite; for, among the many millions of his kind that exist, no two persons have yet been discovered exactly alike. It is a study that will strengthen your capacity in every purpose for which you enter the world; one that will enlarge your own discrimination and judgment, and will enable you to form a correct opinion of others, according to their merits and qualifications.

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* A Geological Manual by H. T. De La Beche, F.R.S. &c.

The necessary discipline by which military societies are regulated is much calculated to check an unrestrained freedom of conversation between superior and subordinate classes; and hence the inferior lose all the benefit they might derive from the opinions of those above them. But, as in all societies some rules of conduct and conversation are tacitly admitted, and as politeness excludes from private circles all rudeness or intrusive importunity, so, in official society, much might be done to promote agreeable and instructive intercourse, without descending from necessary self-respect on the one hand, or incurring undue familiarity on the other. Unfortunately, a feeling of collective jealousy of each other frequently prevails among individuals in distinct stations, which feeling is regarded in their private intercourse. And where the superior happens to be deficient in information to his inferior, it requires considerable address in the latter to deliver his opinions with that apparent deference which good-breeding and the distinctions of rank may demand, without appearing presumptive. In such cases, it is necessary that the inferior should remain silent, or be very guarded in his expressions, secretly taking care, that the adventitious circumstance of their being uttered by higher rank does not give authority to erroneous statements, in preference to what his own deliberate conviction assures him to be correct. Should his opinion be seriously called for, it should be given ingenuously, and respectfully; and, should any great emergency arise, where it may be his duty to expostulate on any impropriety manifestly injurious to the interest of the service going forward, he must expostulate with caution and deference; and if he be forbidden to do so, it is his duty at once to desist, and remain silent; the injury arising to the service in general from such an inversion of authority being probably of a far greater consequence than any casual occurrence arising from the point in question.

To know the certain bounds of his duty, and never to overstep them, for the purpose of displaying superior talent, or with the hope of accelerating his promotion, will extinguish any jealousy which the superior abilities of an inferior officer might excite in the breast of his superiors; they will admire his modesty, and will direct him to execute their orders in a manner pleasing to himself; and, while he bears in mind, that with his utmost official attainments, he is necessarily subordinate to their authority, they will at all times pay a just tribute to his commendable self-control. Thus, though I wish you to acquire a prompt and sagacious method of thinking, acting, and speaking, for yourself, on every necessary occasion, in public or private life, whether of important or minor consequence, it is with a view to consolidate your own talents, not to expose the errors of others: and in your official demeanour you must never forget that the first essential duty to be impressed on the mind of every subordinate individual, is the indispensable one, that you should as soon as possible LEARN HOW TO OBEY.

It is frequently the duty of a young man, both to himself and to his companions, to resist their importunities to adventure on improper indulgencies, and it is only by an accurate knowledge of what is right or wrong, and a uniform correctness in his own deportment, that his "yes" or "no" will be satisfactory to himself, and may be beneficial to them. It is a much mistaken clemency to the vices or follies of others, ever to countenance them, by withholding the latter monosyllable, when urged to join therein: it may not be his duty to expostulate, but it most assuredly may be so to deny the sanction of his word, or participation.

Make it your constant study to compress all your mental acquirements within the ready call and command of practical utility; and, that you may never be at fault for an expedient in the most unexpected emergency, you should always be able, in critical moments, to take your knowledge as you would your sword, in your right hand, and, as it were, to wield it with direct and unerring effect. Study is but the training seminary to action; its combined results must be wrested from the closet, to give energy, grace, celerity, promptitude, and vigorous execution to the duties which officers are called on to perform. This ready faculty will extemporaneously collect all your resources in every extremity, and, while the habitual indifference to any inclemency of weather, that is soon acquired by those inured to all its vicissitudes in various climates, will endow you with a masculine and intrepid manner of command, which will create confidence and vigour in those around you, a brisk and ready delivery of your orders will inspire them with alacrity and zeal in their execution.

Much exposure to the weather may, in some instances, undermine a delicate frame; but I believe that an opposite tendency is far more prevalent, and, that to its account is often wrongly attributed the enervation which proceeds from excess and intemperance. Nothing is more conducive to general health than to restrain every appetite within the bounds of moderation and discretion, and nothing is more destructive to it than that which is usually misnamed a life of pleasure. When confined within their proper limits, the pleasures of affection, the pleasures of the table, the pleasures of the field, or those of the saloon, are pure and salutary sources of enjoyment; but, in his unrestrained indulgence, the libertine, the gourmand, the mere fox-hunter, and the dangling petit maitre, are continually the prey of successive satiety and repletion. An habitual relish for spirituous liquors is dangerous and unbecoming; a glass of grog, during excessive fatigue, or exposure to a stormy winter's night, may be exhilarating, but may be productive of bad effects; and, at all times, it is a beverage which should be most sparingly used, or its never-failing consequences will assuredly be enervation of body, loss of health, and degradation of character.

I shall reserve many mere technical directions for our future correspondence, when you will possess sufficient experience to enter more immediately into them; and, according as you profit by your experience, and continue to merit my regard, I shall, from time to time, be happy to unfold to you many points for your consideration, relating to your profession, which my past servitude has enabled me to do. I have considered the contents of these letters as important, to prepare you to take your station in public as well as private society with credit and reputation to yourself; as important, so to prepare you that you may hereafter become as it were a thunderbolt in war, and a contented philosopher in peace, and that you may move with the calm and contented feeling of unassuming dignity and independence among those gentlemen of birth and education, who are very apt to undervalue the characteristic pursuits and undissembling sincerity of the real naval officer. May those higher distinctions hereafter signalize you, the real value of which your constant avocations, amidst the perils of war, the fury of the storm, the successes, the reverses, the advantages, and the disadvantages, of your noble profession, will perpetually illustrate; and may manly piety, and integrity, urbanity of manner, generosity and magnanimity of disposition, illuminate your character with that pure light of real excellence which requires no artificial irradiation for its embellishment!

Ever retain an open, frank, and liberal feeling of gratitude for real services conferred on you; but never subject yourself to the simpering, insincere, contumely of the time-serving courtier, by soliciting his favour or patronage.

By thus abstaining from the weight of obligation, you will possess the satisfactory consciousness of being the independent arbiter of your own fortune;

and, whether it leads you to high promotion, or keeps you down in the subordinate ranks of your profession, your intrinsic nobility will still be the same—a nobility far above the insignia of mere court decoration, or the adventitious endowment of lands or funds, and which will render you superior to every adulatory coxcomb, whose greatest merit consists in the depth of his purse, the fashion of his clothes, or the gaudiness of his equipage. His brilliant establishment might long ago have been abruptly intruded on by the more dazzling finery of a neighbouring nation, had not the collective valour of those hardy veterans, whose discourteous buffeting with storms and bloodshed he affects to despise, been its guard and protection.

The possession and practice of pure and virtuous principles are far above the shallow unreality of external splendour, and, at the close of a well-spent life here, will enable you to look towards removal to a better one with contented and tranquil composure. To those who are thus hourly prepared for eternity, death is so far from being an obnoxious visiter, that, on the contrary, he is welcomed by them: I therefore most peremptorily command you ever to disregard the most alluring solicitations of worldly prosperity, when they would infringe on your virtue, or your honour, your duty to your Maker, to your country, or to yourself. Never forget, however brilliant your future attainments may become, that modesty is the most becoming attribute of excellence; and constantly bear in mind, that all knowledge is really the gift of the Almighty, who has no pride, although He is infinitely wiser than all the beings which He has created. He, who made you, made your capacity likewise; and, although He has ordained that you should be diligent in cultivating that which He has so bountifully bestowed, should you become inflated by vain glory in yourself, He can, in one instant, deprive you of all your greatest acquisitions.

I now take my leave of you, confident that you will not go forth into danger, without the protection of Him who can preserve your innocence incorruptible, and who, whenever it may be His holy will, can, earlier or later, exalt you to a far higher station than is to be found in this world.

IX.—BURIAL AT SEA.*

From his room to the deck, they brought him drest
For his funeral rites, at his own request,
With his boots, and stock, and garments on,
And nought but the breathing spirit gone;
For he wished a child might come and lay
An unstartled hand upon his clay.
Then they wrapped his corse in the tarry sheet,
To the dead as Araby's spices sweet,
And prepared him to seek the depths below,
Where waves never beat, nor tempests blow.

No steeds with their nodding plumes were here—
No sabled hearse, and no coffined bier—
To bear with parade and pomp away
The dead to sleep with his kindred clay.
But the little group, a silent few,
His companions, mixed with the hardy crew,
Stood thoughtful around till a prayer was said
O'er the corse of the deaf, unconscious dead.
Then they bore his remains to the vessel's side,
And committed them safe to the dark-blue tide:
One sullen plunge—and the scene is o'er—
The sea rolled on as it rolled before.

In that classical sea, whose azure vies
With the green of its shore, and the blue of its skies—
In some pearly cave, in some coral cell—
Oh! the dead shall sleep as sweetly, as well,
As if shrined in the pomp of Parian tombs,
Where the east and the south breathe their rich perfumes.
Nor forgotten shall be the humblest one,
Though he sleep in the watery waste alone,
When the trump of the angel sounds with dread,
And the sea, like the earth, gives up his dead.

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* Written by an American gentleman who died at Marseilles. It is taken from Poetical Sketches of the South of France, by the Rev. B. Bailey, M.A.

LITERARY AND SCIENTIFIC NOTICES.

BOOKS.

GUIDE des Marins, pendant la Navigation Nocturne, ou Description générale des Phares, Fanaux, etc. construits pour la Sureté de la Navigation. Par M. COULIER. Paris.

This is an attempt to collect in one work a description of every lighthouse in the world. Such a work deserves every possible encouragement from navigators; because, while it requires much toil, it is a most useful one, and, in consequence of the changes which are continually going forward, incessant care and vigilance must be employed to keep it in a state approaching perfection.

The accounts of the lighthouses are arranged in the order of coasts and seas, prefaced by an introduction, containing a short account of the origin and progressive improvements in these safeguards to navigation, from the earliest to the present times. We are not certain whether the arrangement of the work might not be improved on the principle of a little pamphlet, containing a tabulated statement of the lighthouses of the British islands, published last year, from the Hydrographical office of the Admiralty.

In the second supplement to his work, M. Coulier has introduced the notice of the new light on Tory island, as given in page 15 of our first volume. By referring to page 506 of the same volume, he will find an error in the height of the lighthouse, corrected by Capt. Mudge; for, by some means, an error in the actual height of the light found its way into this notice, and he may depend on Captain Mudge's account being correct.

NEW NAVAL INSTRUCTIONS.

(Continued from page 350.)

[We were obliged to reserve our remarks on the Great Gun Exercise which has appeared in the New Naval Instructions, and have now only space for the following.]

The first authorized exercise for the great guns was issued in 1817—a well drawn up, practical manual—the result of the experience of several officers, gained during a long and active war. Since that time many improvements have taken place, which have been embodied in the manual before us, and which bears the marks of having been drawn up by a practical gunner, who has evidently made himself acquainted with the minutiæ of the business, to enable him to instruct others.

The 1st alteration we shall notice is in fighting both sides, when the men are to provide for, and cast loose their own gun and opposite, not 1 and 2 as formerly; and thus the 1st and 2d captains, and indeed all the crew, whether fighting one or both sides, will always be at their own guns—not so before—and the spare hands not employed loading will give assistance right and left as required, never leaving their places between the guns, nor having occasion to pass round the rear of the gun at the moment, perhaps, the captain is taking aim.

2d Improvement is a Stationary Powder-man to every two guns and opposite; a very requisite precaution, and much wanted.

3d. The peculiar beat of drum at once denotes "Clear for Action," "Cast loose the Guns," which, owing to the division of duties, may now be effected at the same time.

4th. A simple table contains at one view the stores each man is to provide, and his duties; the provision of stores being divided among six men will be the same in all ships, whatever the number of men at the guns. No. 1 having to command and fire, is very properly given the priming wire, tube-box, &c., and makes use of them himself, instead of looking for another to do it for him, as in the old exercise.

5th. The orders for the arrangement in the magazines, passages, &c., for a regular supply of powder to the different decks, and to prevent its accumulation, are very necessary and useful.

6th. A more complete code of Gunner's Instructions, and a new table for filling cartridges, whether for "*Distant*," "*Full*," or "*Reduced*" charges, &c.; as also an important distinction by balls, painted of different and distinct colours, by which these cartridges, as well as the corresponding cartridge-boxes, may be distinguished. Such are some of the chief alterations and improvements, and they will tend much towards a more efficient, practical, and uniform system of exercise of the great guns throughout the service.

Note.—Owing to the general introduction of guns working on a pivot in steam-ships, gun-brigs, &c., and also when pointing through stern and chase ports, the order "*Muzzle right*," "*Muzzle left*," is recommended to be substituted for "*Muzzle aft*," *Muzzle forward*." We think a sailor would always understand the latter, and more cheerfully obey it.

THE NEW NAUTICAL ALMANAC.

CHANGES IN RULES OF NAUTICAL ASTRONOMY.

(Concluded from page 351.)

Longitude by Occultation of a fixed Star, &c.

30. Get a Greenwich date in mean time*, and also a ship date in mean time, both as exactly as possible. Take from the Nautical Almanac *sidereal time at mean noon*, the moon's R.A. in time to nearest hundredth of second, and its decl. to nearest tenth of second; also the moon's hor. semid. and par. to nearest tenth of second. Correct the hor. par. and latitude of place for reduction.

The application of the rule will then be the same as before, except in the following particulars:

1. The R.A. of star and the hour angle need not be turned into degrees.
2. The correction of the hour angle and correction of R.A. of star for parallax must be turned into time; the latter to nearest hundredth of second.
3. The moon's semid. in R.A. must be turned into time to nearest hundredth of second.

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* Where there is a chronometer, this date is best got by applying the error to the time shewn by it at observation. When there is not, it must be found by applying the estimated longitude in time to the ship mean time. Ship mean time must be found by determining as near as possible, by observation, the error of a chronometer or common watch on ship mean time, by altitudes of heavenly bodies taken as near as possible E. or W. of meridian; both E. and W. if it can be done.

But as this method of determining the longitude is generally applicable only on shore, the R.A. of the moon's enlightened limb may be supposed to be known at the instant of the observation from a sidereal clock, whose error has been determined by meridian passages of stars near the moon; to which the moon's semidiameter being applied, the result is R.A. of moon's centre in time.

4. If the resulting R.A. in time of moon's center be the same exactly as that taken from Nautical Almanac, the Greenwich date in mean time must have been exactly right. If not, correct the date by the interval due to the difference found by knowing, from Nautical Almanac, the change for 1^h or 3600^s. Repeat the work, or rather the parts of it affected by the change; and go on thus, till the assumed Greenwich date is shewn to be correct by the agreement of the resulting R.A. with the R.A. taken out of the Nautical Almanac for that date.

Thus will be known the error of the chronometer, or watch, on Greenwich mean time; and also the longitude by taking the difference between Greenwich mean time and ship mean time.

CHARTS.

THE BAY OF ISLANDS, in Eaheinomawe, New-Zealand, from M. Duperry's Atlas, 1824. Size, Half Double-Elephant. Admiralty. No. 2080.

As its title implies, this is a literal copy from the survey in M. Duperry's Atlas, and nearly on the same scale as he has given it. There is yet much to be done here, both in filling in soundings and in obtaining the names of several islands and places not inserted by M. Duperry, and several plans of this bay differ materially from the present. We can, however, place every confidence in this survey, and we hope that the native names which M. Duperry has adopted will be used in the future sailing directions for the bay.

PORT LLOYD,* on the western side of Peel Island, one of the Arzobispo or Bonin Islands. By Captain F. W. Beechey, R.N. F.R.S. Size, Half Double-Elephant. Admiralty. No. 2255.

The Arzobispo or Bonin Islands (a small chart of which is contained in this sheet) form a small group, divided into three clusters, in the western part of the great Pacific Ocean, from 27° 44′ N. to 26° 30′ N. lat., and the principal of them is Peel Island, so named by Captain Beechey after the late Secretary of State. The plan before us shews the port very distinctly, and contains several views of the islands, for the guidance of navigators. In the first part of our number we have given Captain Beechey's directions for Port Lloyd, which were drawn up to accompany his survey.

The Bonin Islands are at present inhabited; at least so Captain James informs us; but two persons only were found at Port Lloyd when Captain Beechey was there, and these had belonged to a whaler, the William, of London, wrecked there some time before his arrival. These two men were so pleased with the islands, that they were left there at their own request by the rest of the vessel's crew, who had constructed a boat with which they proceeded to Manilla.

A CHART OF THE WORLD, on Mercator's Projection, with the Tracks of the more distinguished modern Navigators. By JOHN PURDY. New edition. 1833.

Mr. Purdy has chosen a scale for his Chart of the World that enables him to put it into four sheets of double elephant paper. By adopting this scale, the outline of the coasts are made clear and distinct, while, for the use of the navigator as general charts, each sheet is remarkably convenient. We shall not stop to go minutely into the positions in which he has laid down several places, because the one before us is sufficiently accurate for all the purposes of a general chart. Among the tracks, we observe that of the brig Tula, in her late voyage towards the south pole, and the new land reported by Captain Biscoe, her commander, the furthest southern land yet known. We recommend this chart, of all others that we have seen, to those navigators who are desirous of laying down their tracks, to enable them to shew at once all the places they have visited; and there are many among our naval friends, who have frequently been desirous of possessing one for that purpose, similar in all respects to the one before us. It is a chart which should be the first in the collection of every sailor.

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* So called by Captain Beechey, after the late Bishop of Oxford.

Professor Barlow's Variation Globe.

(Continued from page 352.)

Following the examples of Halley, Yates, and Hansteen, Mr. Barlow proceeded to lay down the information he had collected on a chart; but meeting with some anomalies, he was induced to adopt the plan of inserting the variations on a fifteen-inch globe, which he considered far more suitable for such a purpose, inasmuch as the lines of variation would then be shewn in their true form, a condition not to be attained on a plain surface. Discarding the shadow of all theory, Mr. Barlow adopted the actual observations only, and laid down their results, leaving those places vacant on the globe, for which he had no data. These blanks fall principally about the south pole, and on land, excepting in Europe, where the observations have been well supplied by many philosophers and men of science.

Thus having devoted the ocean to the variation lines, it occurred to Mr. Barlow to devote the land to those of equal dips of the needle; an intention, however, which he has not yet acted on. Those parts of the ocean where the variation is east are coloured with a tint of green, to distinguish them from those parts where it is west, which are coloured with a light blue.

On a consideration of these lines on the globe, the professor is induced to believe that they are governed by some mysterious and hidden law; and the regularity of the curves leads him to conclude that the phenomena are not influenced by any parts in its vicinity, and he alludes to the Atlantic ocean as particularly remarkable for this uniformity. In the Indian ocean he has met with a very extraordinary inflection of the curve of no variation, differing from that given in all former charts; and it is remarkable that two-thirds of the earth's equator, or 240°, have easterly variation, and the other third westerly. This anomaly attracted the particular attention of the professor, and he satisfied himself of it by a scrutiny of the observations before-mentioned, and also by a reference to those of many officers of the East India service. These anomalies are distinctly shewn on the globe, and are evidently entirely free from local causes. There is a peculiar accordance in the observations of these seas, which Mr. Barlow attributes to there being a small dip, and, consequently, a greater force exerted on the horizontal needle.

A remarkable feature occurs also in the Pacific ocean, which is, that the line of no variation runs nearly parallel to the equator for 40°, and then down a meridian about 40° more; from which Mr. Barlow deduces, that the magnetic pole must range through 40°, or coincide with the pole of the world, and from thence that there must be more than two, or even four, magnetic poles.

Having thus given the present state of the magnetic curves, Professor Barlow mentions, that, in the history of magnetic variation, the first allusion he finds to this phenomenon is in a letter from Petri Peregrini to a friend, dated in 1269, in which it is stated to be then 5° E. in Italy; and he finds that the method of observing it was, by touching an iron needle with a loadstone, and observing its direction before its power was lost. In London, the variation, he says, was 11¼° E. in 1580, and in 1658 it was nothing. In 1700 it was about 8° W., while in the vicinity of New York it was nothing, and has remained so until the present time. From thence it appears, that the line of no variation would have crossed the Atlantic nearly at right angles to the meridian, about the year 1660, as it now does in the Indian ocean. It has gradually descended towards the south and west, and now crosses some of the eastern part of South America.

From the only observations made in Australia, which are all of modern date, no change of any consequence has been found in the last sixty years. This permanency in the line of no variation is remarkable, as no such constancy was observed in London, where, by the observations made, a change of 20° was found rather more than a century from the time that the line of no variation was found there.

The circumstance of the variation being large, is also attended with a considerable change; and where observation has supplied the means in these places, it has been found that the assumed magnetic pole has performed a circular rotation round that of the earth, from whence the data to compute the variation there at any period is afforded. Churchman was the first to do this, in 1622, and his calculations of this progressive quantity are found to vary little from the truth. Professor Barlow having also made these computations, founded on the variation and the dip for Paris, Copenhagen, and London, which have been found to agree very nearly with the observation made, is at a loss to account for the stationary condition of the magnetic pole in the places alluded to before.

Professor Barlow concludes, that every place has its own magnetic pole; and that should this be the case, and the magnetic pole of any place coincide with the terrestrial pole, the line of no variation would remain stationary; but such a condition could not follow where the variation is great, notwithstanding that, when passing its maximum, the change, according to such hypothesis, would be slow.

PEARCE'S SCREW FID.—Our last number contained a description of Mr. Pearce's screw fid, and a statement of H.M.S. Thunder being fitted with it. It is but justice to Mr. Pearce to record the following extract of a letter we have received from her first Lieutenant, relating to it:—

"I am delighted to inform you, that we have Captain Pearce's screw fid fitted to all three masts. There would have been one advantage in fitting it only to one mast, namely, that we should have had more direct proof of its superiority over the common one. The captain of the main-top has this (the first) afternoon, hove our main topmast backstays taughter than any lanyards could have done. By what I have already seen, I am convinced that the more they are known, and the more familiar one becomes with the many ways in which they would be beneficial, the more they must be approved.

"Yours, &c. "BIRD ALLEN."

"*H.M.S. Thunder, May* 28, 1833."

EXPERIMENTAL CHRONOMETERS.

To the Editor of the Nautical Magazine.

SIR—In some former numbers of your work, you have alluded to our invention of the glass balance-spring to chronometers; and we have the satisfaction to inform you, that a chronometer, newly constructed, and having a glass balance, as well as a glass spring, is now placed at the Royal Observatory, by the direction of the Lords Commissioners of the Admiralty, for the purpose of undergoing a three months' trial.

It is some time since the balance-spring was completed to our satisfaction, and the adjustments for temperature were tried with the usual compensation applied to the common balance. The great difficulty arising from the excess of compensation required for a steel or a gold balance-spring, gave us some trouble, as well as occasioned a loss of time; and, after many attempts to reduce the compensation to so small a quantity as the glass spring required, we found it impossible to obtain it with the metal balance. We therefore determined on constructing a balance likewise of glass, and provided it with the necessary compensation, by means of thin lamina of metal attached to it. This balance we consider as great a step towards perfecting the chronometer as the spring itself. Independent of the lamina, it is a solid body; and the advantage which we anticipate it will have over the ordinary balance is, that it will be in no way affected by centrifugal force, and, under all circumstances, that it will always preserve the same figure.

The errors to which chronometers are generally liable, arise, in many cases from the uncertainty in the construction of the balance-spring, with respect to its being homogeneous, and to this we attach the utmost importance in making chronometers. In our opinion, nothing demands the attention of the chemist more than the production of glass which shall, if possible, be entirely free from lead. As we have manufactured our own glass springs, we find from experience, that the quantity of lead in the glass we have hitherto used is considerable; and we are therefore of opinion, that the relative proportion of the component particles of the glass to each other, in order to form the balance-spring, is a point well worthy the investigation of scientific men, and it is, moreover, one on which we should be most thankful for information. In justice to ourselves, we may state, that three months only have elapsed since we completed the spring, which time has been employed principally in forming the balance, and in constructing and adjusting the chronometer. Previous to depositing it at the Royal Observatory, we obtained the rate of it for eight days, one which proved very satisfactory.

From the time of Hook to the present, we believe these to be the first experiments (made public) for the improvement of the balance spring of the chronometer; and it is worthy of remark, in these experiments, that the improvement of the balance has followed that of its spring. Should the result prove successful, they must be considered as the greatest improvement in chronometrical science since the application of compensation for the errors of temperature on the balance by Harrison—an improvement for which he received the reward of £20,000.

There can be no doubt that our invention is well worth the expense which would be incurred by taking a patent; but when we reflect that the present improvements have arisen from experiments made with our own chronometers, and on our own application to the Lords Commissioners of the Admiralty, we consider the part we have adopted as more consistent with the reception we have experienced at their Lordships' hands, while we are quite satisfied that it will tend more to promote the advancement of the science by others.

We are, Sir, &c.
ARNOLD & DENT.

THE AFRICAN EXPEDITION.—The brig Susan, in our table of wrecks, was charged with despatches from the African Expedition, with various letters to the merchants at Liverpool. They had been sent down in a canoe from Eboe, (about 150 miles from the mouth of the river,) and put on board the Susan, for conveyance home. The Susan had been lying in the mouth of the Nun about a year, and was assisted in fitting for sea, and with provisions, by the steam-boats. In consequence of the loss of the vessel, with these despatches, the intelligence of the arrival of the steam-boats at Eboe depends on the statement of two seamen at Liverpool who had belonged to her. There is no doubt of this being true.

It is with much regret, however, we find that the effects of the climate had already shewn itself in the Quorra, the largest of the two steam-boats, by the following extract of a letter from Mr. Lander to R. W. Hay, Esq.:—

"I am sorry to inform you, that the fever which broke out in the expedition has proved fatal to the Captain of the Quorra, and also to a second engineer, and a seaman. The expedition reached the river Nun on the 20th October."

Mr. Harries then commanded the Quorra, for which duty the nautical skill and experience he had partly acquired in the Royal Navy well qualified him. He was entrusted with the entire charge of the expedition, and died sincerely regretted.* The vacant office has in consequence devolved on Mr. M'Gregor Laird to fill; and, although we have a high opinion of that gentleman's accomplishments as a surveyor and draftsman, we fear that the increased duties he will have to perform will much interfere with this important part of his occupation.

Lieut. Allen, who accompanies the party, by permission of the company of gentlemen to which the vessels belong, had embarked in the Elburka, the iron steam-boat, with Richard Lander, which vessel was superior in every respect to the Quorra. The report of her is, that she has not made a cup-full of water since she left Liverpool, and that she is much cooler, and more comfortable, than the Quorra.

It is stated that King Obie was on board the Quorra, on a visit to his old friend Lander, who, our readers will remember, had made the acquaintance of his sable majesty under very different circumstances to the present. In fact, it was as a prisoner, and in his power, pennyless. The fulfilment of Lander's ransom, the source of all his sorrow, when he last left the river, had produced all the good effect on King Boy which might be expected; but the additional present of a gaudy Highland uniform, profusely ornamented, had well-nigh turned the brain of the "most honest of the brass kings." With a due consideration for his subjects, he had caused a platform to be raised in his canoe, on which he constantly displayed himself in his new attire. The splendour of his dress, although not so dazzling as the bits of looking-glasses with which King Obie's robes were ornamented, was worth to him more *bars* than he had expected as the price of conducting Lander, and his brother, to the mouth of the river. It is against the religion of the Eboe people for any of them to wear trowsers! excepting their great King Obie; and consequently

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* The intelligence of this officer's death produced so severe a shock on his mother, that she lived only two days after it arrived.

King Boy could indulge that desire for finery so prevalent in the untaught Indian, and enjoy the luxurious coolness of the Highland kilt, while his friend Obie was laced up in his tight dress and pantaloons, so well described by Lander; and this he could do without infringing the law. After this, we expect to hear of large demands for kilts in the Eboe country, for we do not know any dress better calculated for the climate in general.

Accounts are daily expected from this interesting expedition.

THE ALPS.—We understand that Mr. Brockedon has a volume in the press, containing his personal narrative of the journeys he made, to illustrate the passes of the Alps.

ADMIRAL.—The following derivation of this word is given in Jeake's Charters of the Cinque Ports:—"From the Saxon *Aen mere al*, that is, *over all the sea. An officer that commandeth on the sea.*" And, respecting the office, he adds—"Now, as to all the sea coasts along which the Ports lie, the Admiralty thereof is common to the Warden of the Ports; and he is called *Warden, Chancellor*, and *Admiral*, of the *Cinque Ports*; the *two ancient towns, and their members*; according to which titles are the courts held before him, viz. as he is Warden, the court of *Shepway*; as Chancellor, a court of *Chancery*, or *Equity*; and as Admiral, a court of *Admiralty*; both which latter are usually kept at the Church of St. James the Apostle in *Dover*."

DRAWING-PAPER.—For the benefit of our young naval friends, who may be laying in their sea-stock of drawing-paper, we insert the various sizes of this article, and the names of them.

		Inches.		Inches.
Demy	Length	19½	Breadth	15
Medium	—	22	—	17
Royal	—	24	—	19
Super Royal	—	27	—	19
Imperial	—	30	—	21½
Elephant	—	28	—	23
Columbia	—	34	—	23
Atlas	—	33	—	26½
Double Elephant . . .	—	40	—	26½
Antiquarian	—	52	—	31
Extra Large	—	55	—	38

We believe that paper even larger than the last is also made.

IRON STEAM-BOATS.—An iron steam-boat, of 90 horse power, is constructing at Liverpool, for the City of Dublin Steam-packet Company, to be employed on one of the lakes in Ireland. Her length on deck is 130 feet, and her register will be 240 tons.

TONNAGE.—The following proposed method for the admeasurement of vessels for tonnage is inserted in a bill now before parliament.

In decked vessels, the length in feet, taken from the fore part of the main stem to the after part of the stern post, at half the height from the bottom of the keel to the top of the uppermost deck. The area of the transverse section to be taken at the middle of each of eight equal portions of length, into which the whole length shall be divided. The boundaries of these sections to be a straight line across, at the level of the average height of the top of the uppermost deck, and the outer surface of the bottom, whether that be bottom plank, sheathing, or doubling, keel or false keel. The areas of these vertical transverse sections to be ascertained by dividing the depth from the boundary line above to the level of the underside of the plank at the keel into eight portions, taking the breadth at the middle of these portions, adding these eight breadths together, dividing them by eight, and multiplying the quotient by the height, and to add to the product the area of the section of the keel.

The length to be multiplied by one-eighth of these eight areas of transverse vertical sections, and the product, divided by 150, to be deemed the true contents of the tonnage.

In open boats, the length to be taken over stem and post, at one half of the height from the bottom of the keel to the top of the gunwale. This length to be divided into eight equal portions, and the extreme breadth to be taken at the middle of each of these portions of length; the average of these breadths to be taken, by dividing their sum by eight. The length to be multiplied by the average breadth; the product by half of the average breadth, and that product, divided by 150, to be considered the tonnage.

All ships and vessels which, from lowness of deck, or other cause, do not measure at least as much by the rule for decked vessels, as by the rule for open boats, to be held to come under the latter denomination, and measured accordingly.

All ships now built and registered, to remain at their present registered tonnage, unless the owners request to have them remeasured in conformity with the present plan.

A note is added to this plan, for measuring tonnage, that, should it be carried into effect with the bill, the effect would be, to leave the British artist to the free exercise of his architectural skill—and to raise the mercantile navy of the United Kingdom from its present degradation, to a pre-eminence as regards beauty, safety, and speed, as far above, as it is at present below that of other nations. It appears to us, however, that there are difficulties in obtaining the measurements proposed, which will not be readily overcome.

MERCHANT SERVICE.—A petition, by the friends of the British sea service, has been presented to the House of Commons, for the adoption of a maritime code of laws.

NAVAL IMPRESSMENT.—A petition, for the abolition of impressment of seamen for the naval service, has been presented to the House of Commons, from the sailors and their friends of the St. Katherine's Docks.

ROYAL NAVAL SCHOOL.—A meeting of the friends and subscribers to the above Institution was held on Tuesday, at Willis's Rooms, for the purpose of taking into consideration a resolution passed at the last meeting, as to the propriety of reducing the amount of the annual charge (25l.) for the maintenance of each pupil, or to extend the number of pupils admitted gratuitously into the School; and also for confirming the regulations.—The meeting was not very numerously attended; Admiral Sir Robert Stopford in the chair; and there were also present Vice-Admiral R. Lambert, Rear-Admiral Sir Courtenay Boyle, Capt. Lord Byron, Sir Richard Dobson, M.D. of Greenwich Hospital, Captains Montague, R. L. Baynes, Maconochie, Brenton, Dixon, Luke; Lieut. William Gardiner, &c.—Captain Dickinson, in moving the amount of charge for the support of each pupil should be reduced, entered into a very irregular address, during which he was frequently called to order, and charged the

Council with sinister motives in altering the original terms of the resolutions upon which the Society was founded; and also with shewing a greater partiality for the richer class of officers. He considered the poorer class of the service could not afford to pay 25l. a year.—Admiral Lambert, as President of the Council, replied, that all the acts of that body had been unanimously adopted, and contended that the charity could not be conducted on a lower scale of expenditure than at present. It would cost a parent nearly as much to support his boy in board and clothing, without education, as was paid to the charity, for supplying the best of every thing.—Capt. Montague observed, that the alteration made in the resolution was a matter of delicacy to the feelings of the gallant Officers, whose children were admitted into the school; but the spirit of the resolution remained the same.—Sir Robert Dobson, to shew there was no partiality evinced to officers of higher grade, stated there were of—

Admirals	382 subscribers	54 children admitted.
Captains		
Commanders		
Lieutenants	319 ditto	57 ditto.
Pursers	146 ditto	14 ditto.
Surgeons		18 ditto.
Masters		5 ditto.
Marines	32 ditto	5 ditto.

Amongst those admitted of Admiral's children, were several orphans.—Capt. Dickson's motion was lost on a division, as was also an amendment of Capt. Brenton's, that the number be increased of boys admitted as orphans, and others, gratuitously educated.

NAUTICAL MISCELLANY.

NAVAL INTELLIGENCE.

The Royal Navy in Commission.

⁂ S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

Actæon, 26—Hon. F. W. Grey, 1st May, at Constantinople.

Ætna, S. V. 6—Com. E. Belcher, sailed for Mediterranean, to survey the Esquerque shoals.

African, St. V.—Lieutenant J. Harvey, 9th June sailed for Lisbon. Passengers, Messrs. Gald Paiva, two Lousadas, Mazza, George, and the General Frein.

Alban, St. V.—Lieutenant A. Kennedy, Hamoaze. Refitting.

Alfred, 50—Capt. R. Maunsell, 20th May at Malta.

Algerine, 10—Com. Hon. J. F. F. De Roos, 11th March arrived at Rio, 16th April at Bahia, from Pernambuco.

Alligator, 28—Capt. G. R. Lambert, 26th Jan. arrived at Madras from Penang. Sailed 31st.

Arachne, 18—Com. W. G. Agar, May, at Barbadoes.

Ariadne, 28—Capt. C. Phillips, 24th April at Port Royal, Jamaica; arrived 5th.

Asia, 84—Rear-Adm. Parker, C.B., Capt. P. Richards, Tagus, 19th May.

Astrea, 8—Capt. W. King, Falmouth, superintendent of Foreign Packets.

Athol, *Troop Ship*—Mr. A. Karley, 22d Feb. sailed for Demerara.

Badger, 10—Com. G. F. Stowe, Simon's Bay, 20th Dec.

Barham, 50—Capt. H. Pigot, 20th May at Napoli di Romania.

Beacon, S. V.—Com. R. Copeland, Archipelago.

Beagle, 10, S. V.—Com. R. Fitz-Roy, 27th March at Rio Janeiro.

Belvidera, 42—Capt. Hon. R. S. Dundas, 3d May arrived at Malta. Left Malta 20th May; 18th June arrived at Spithead. Passengers, Lady F. Hotham and family; Capt. W. Hotham, R.N.; Mrs. Captain Lyons and daughters; I. Irving, late secretary; Lieutenant Eden; Mr. Willington, Midshipman, and Mr. Marchant, Purser; and Mr. Aylen, Master, invalided.

Blanche, 46—Capt. A. Farquhar, K. H. C. B. 6th April sailed on a cruise.

Brisk, 3—Lieut. J. Thompson, coast of Africa.

Britannia, 120—Vice-Admiral Sir P. Malcolm, Capt. P. Rainier, 16th May sailed for Dardanelles; 23d May arrived at Gibraltar.

Britomart, 10—Lieutenant H. Quin, 21st May spoken in lat. 40 N. lon. 12 W.; 26th May arrived at Madeira.

Buffalo, *Store Ship*—Mr. F. W. R. Sadler, *Master*, 12th May sailed for New South Wales.

Caledonia, 120—Captain T. Brown, Hamoaze.

Carron, St. V.—Lieut. Com. J. Duffill; Portsmouth Station.

Castor, 36—Capt. Rt. Hon. Lord John Hay, 28th May sailed for Lisbon and Mediterranean; 7th June off Oporto.

Ceylon, 2.—Lieut. H. Schomberg, Malta.

Challenger, 28—Capt. M. Seymour, Portsmouth, fitting.

Champion, 18—Com. Hon. A. Duncombe, May 12th at Malta.

Charybdis, 3 — Lieut. Com. R. B. Crawford, coast of Africa.

Cockatrice, 6—Lieut. Com. W. L. Rees, Rio Janeiro.

Cockburn, 1—Lt. Com. C. Holbrook, Kingston, Lake Ontario.

Columbia, St. V. 2—Lt. Com. R. Ede, Plymouth.

Columbine, 18—Com. O. Love, 1st April at Jamaica, from Barbadoes.

Comet, St. V.—Mr. T. Allen, Woolwich.

Comus, 18—Com. W. Hamilton, 15th April spoken in lat. 28¼° N. 42½° W.

Confiance, St. V. 2—Lieut. Com. J. W. Waugh, 12th June arrived at Falmouth: left Lisbon the 6th, and Oporto the 7th.

Conway, 28—Captain Eden, 7th June off Oporto.

Cordelia, 10—Com. C. Hotham, 20th May at Malta.

Curaçoa, 26—Capt. D. Dunn, 1st Sept. arr. at Manilla from Singapore.

Curlew, 10—Com. H. D. Trotter, coast of Africa.

Dee, St. V. 4—Com. R. Oliver, (*b*) 12th June arrived at Portsmouth from Lisbon and Oporto. Passage from latter place 3½ days; 14th arr. at Sheerness. Passengers home, Mr. Cunningham, Surgeon, late of Britannia, superannuated; and Rev. T. Surridge, chaplain.

Dispatch, 18—Com. G. Daniell, 26th April arr. at Barbadoes from Trinidad; 15th May at St. Thomas's from Tortola.

Donegal, 78—Capt. A. Fanshawe, 31st May arr. at Spithead; 4th June sailed; arr. at Plymouth 6th; 8th sailed for Portugal.

Dromedary—R. Skinner, Bermuda.

Dublin, 50—Capt. Rt. Hon. Lord J. Townsend, 24th Feb. at Valparaiso; arrived there the 13th.

Echo, St.V. 2—Lieut. Com. Otway, Oporto.

Excellent, 58—Capt. T. Hastings, Portsmouth.

Fair Rosamond, *Schooner*—Lieut. Com. G. Rose, Portsmouth.

Fairy, S. V. 10—Com. W. Hewett, sounding in the North Sea.

Favorite, 18—Capt. J. Harrison, 12th March off Prince's Island.

Firebrand—Lieut. W. G. Buchanan, Woolwich.

Firefly, 2—Lieutenant J. M'Donnel, Bahamas.

Firefly, St. V.—Lieut. T. Baldock, 16th May arrived at Gibraltar; 18th sailed for Malta.

Flamer, St. V. 6—Lieut. R. Bastard, 20th April, arr. at Falmouth.

Fly, 10—Com. P. M'Quhae, 17th April sailed from Havana.

Forte, 44—Capt. W. O. Pell, Hamoaze.

Gannet, 18—Com. J. B. Maxwell, 2d May arr. at Maranham.

Griffon, 3—Lieut. Parlby, 27th April arr. at Gambia: Bight of Benin.

Harrier, 18—Com. H. L. S. Vassal, 25th Oct. arr. at Madras from Calcutta.

Hermes, St. V.—Lieut. J. Wright, 31st May arr. at Falmouth; 6th June arr. at Plymouth; 12th sailed for Woolwich.

Hornet, 6—Lieut. F. R. Coghlan, Rio Janeiro.

Hyacinth, 18—Com. F. P. Blackwood, 19th May sailed for East Indies.

Imogene, 18—Capt. P. Blackwood, East Indies.

Investigator, 16, S. V.—Mr. G. Thomas, Shetland Islands.

Isis, 50 — Rear-Adm. F. Warren, Captain J. Polkinghorne, Cape station.

Jackdaw, S. V.—Lieut. E. Barnett, 7th May at Funchal; 8th sailed for West Indies.

Jupiter, *Troop Ship*—Mr. R. Easto, 28th Feb. arrived at Rio Janeiro; 8th March sailed.

Kangaroo, 3—Lieut. T. Hickey, Bahamas.

Larne, 18—Com. W. S. Smith, 10th May sailed for West Indies.

Leveret, 10—Lieut. W. F. Lapidge, 26th May off Oporto.

Lightning, St. V.—J. Allen, Woolwich.

Madagascar, 46—Capt. E. Lyons, 2d April at Malta.

Magicienne, 24—Capt. J. H. Plumridge, 31st Jan. sailed from Madras.

Magnificent, 4—Lieut. J. Paget, Port Royal.

Magpie, *Cutter*—Lieut. J. Moffat, Sheerness.

Malabar, 74—Capt. Hon. J. Percy, 12th May at Malta.

Mastiff, 6, S. V.—Lieut. T. Graves, Archipelago.

Melville, 74 — Vice-Admiral Sir John Gore, K.C.B., Capt. H. Hart, 18th Jan. at Bombay.

Messenger, St. Transp.—9th June arr. at Sheerness with troops from Chatham; 16th June sailed for Lisbon.

Meteor, St. V.—Lieut. Symons, 30th March at Marseilles.

Minx, 3—Lt. J. Russell, 10th Jan. at Jamaica.

Monkey, —Lieut.———, Feb. at Jamaica.

Nautilus, 10—Com. Rt. Hon. Lord G. Paulett, Oporto.

Nimble, 5—Lieut. J. M. Potbury, Jamaica in March.

Nimrod, 20—Com. Rt.Hon. Lord E. Russell, 8th June Plymouth Sound; 14th sailed for Lisbon.

North Star, 28—Capt. Lord W. Paget, 12th April arr. at Jamaica from Bermuda; sailed 13th for Halifax.

Ocean, 80 — Vice-Admiral Sir John Poo Beresford, Bart. K.C.B., Capt. S. Chambers, Sheerness.

Onyx, 10—Lieut. A. B. Howe, Plymouth.

Orestes, 18—Com. W. N. Glascock, Oporto.

Pallas, 42—Capt. W. Walpole, April at Tortola; 12th May arr. at Antigua from Jamaica.

Pearl, 20—Com. R. Gordon, 7th April sailed on a cruise.

Pelican, 18—Com. J. Gape, 29th April sailed for Alexandria; 20th May arr. at Malta.

Pelorus, 18—Com. R. Meredith, 9th Jan. Simon's Bay.

Phœnix, St. V.—Com. R. Oliver, Woolwich.

Philomel, 10—Com. W. Smith, 17th April arr. and 8th June at Gibraltar.

Pickle, 5—Lieut. C. Bagot, Bahamas.

Pike, 12—Lt. A. Brooking, 15th June sailed for Oporto.

Pincher, 5—Lt. J. Hookey, Feb. at Jamaica.

Pluto, St. V.—Lieut. T. R. Sulivan, Bight of Benin.

Prince Regent *Yacht*—Capt. G. Tobin, Deptford.

Pylades, 18—Com. E. Blankley, 21st Jan. at Buenos Ayres; 16th April at Monte Video.

Racehorse, 18—Com. F. V. Cotton, 11th March arr. at Jamaica.

Rainbow, 28—Flag of Rear-Ad. T. Briggs, (*pro tem.*) Capt. Sir J. Franklin, Knt. 20th May at Malta.

Raleigh, 18—Com. A. M. Hawkins, 25th March at Salonica, April at Smyrna.

Rapid, 10—Com. C. H. Swinburne, 20th May at Napoli di Romania.

Rattlesnake, 28—Capt. C. Graham, 23d Dec. sailed for Lima and California.

Raven, S. V. 4—Lieut. W. Arlett, Mediterranean.

Revenge, 78—Capt. D. H. Mackay, 20th May arr. at Plymouth. Hamoaze.

Rhadamanthus, St. V.—Com. G. Evans, 20th April left Madeira.

Romney, *Troop Ship*—Mr. B. Brown, 8th April arrived at Barbadoes; 13th arr. at Jamaica.

Rover, 18—Com. Sir G. Young, Bart., 12th May at Malta.

Royal George *Yacht*—Capt. Right Hon. Lord A. Fitzclarence, G.C.H., Portsmouth.

Royal Sovereign *Yacht*—Capt. C. Bullen, C.B., Pembroke.

Royalist, 10—Lieutenant R. N. Williams, Plymouth station.

St. Vincent, 120—Capt. H. F. Senhouse, 17th April at Gibraltar; 13th May arr. at Malta; 20th May at Malta.

Salamander, St. V.—Com. W. F. Austin, 21st June arr. at Portsmouth, and sailed, having embarked Marines for Milford.

Samarang 28—Capt. C. H. Paget, 16th April at Rio Jan.; arr. from Coquimbo 29th Mar.

San Josef, 110—Admiral Sir W. Hargood, Capt. G. T. Falcon, Hamoaze.

Sapphire, 28—Capt. Hon. W. Trefusis, 6th Feb. at Jamaica.

Satellite, 18—Com. R. Smart, 6th June arr. at Spithead; 17th June sailed for South America. Passenger, Lieut. Rothery, R.N.

Savage, 10—Lieut. R. Loney, 19th May at Lisbon; 7th June off Oporto.

Scout, 18—Com. W. Hargood, 31st May arr. at Spithead; 9th sailed for Plymouth; 19th sailed for Mediterranean.

Scylla, 18—Com. Hon. G. Grey, 12th May at Malta from Tunis.

Seaflower, 4—Lieut., J. Morgan, 31st May arr. at Portsmouth.

Serpent, 16—Com. Symonds, 18th May arrived at Falmouth: 26th May grounded near the South Foreland. June at Sheerness, refitting.

Skipjack, 5—Lieut. W. Shortland, Bahamas.

Snake, 16—Com. W. Robertson, 4th June arr. at Portsmouth; 15th sailed for South America. Passengers to join H.M.S. Spartiate, Capt. J. Whylock, R.M., Lieutenant W. J. Collins, R.N.

Sparrow, *Cutter*—Lieut. C. W. Riley, 15th June sailed for Falmouth and Lisbon.

Spartiate, 74—Rear-Admiral Sir M. Seymour, Capt. R. Tait, 16th April at Rio Janeiro.

Speedwell, 5—Lieut. Crooke, 11th March arr. at Jamaica.

Speedy, *Cutter*—Lieut. J. P. Roepel, Plymouth, cruizer.

Stag, 46—Capt. N. Lockyer, 1st May arr. at Spithead; 5th June sailed; 6th. arr. at Plymouth; 8th sailed for Portugal.

Swan, 10—Lieut. J. E. Lane, 10th June sailed from Sheerness for Leith, for Scotch fishery.

Sylvia, 1—Lieut. T. Henderson, Portsmouth.

Talavera, 74—Capt. E. Chetham, 26th May sailed for Cork; 5th June arr. at the Nore with 57th Regt.; 16th June sailed for Lisbon.

Talbot, 28—Capt. R. Dickinson, C.B. Cape Station.

Thunder, S. V.—Commander R. Owen, on her way to Portsmouth.

Trinculo, 18—Com. R. Booth, 7th April at Ascension.

Tweed, 20—Com. A. Bertram, 15th April grounded on the Jardinellos Reef, Cuba. May, at Jamaica.

Tyne, 28—Capt. C. Hope, 24th Feb. at Valparaiso; arr. there on the 12th.

Undaunted, 46—Capt. E. Harvey, 7th April at Ascension.

Vernon, 50—Vice-Admiral Sir G. Cockburn, K.C.B., Capt. Sir G. A. Westphal, Knt., 21st April at Jamaica.

Victor, 18—Com. R. Russell, 3d May at at Barbadoes, from Antigua.

Victory, 104—Adm. Sir T. Williams, G.C.B., Captain C. R. Williams, Portsmouth.

Viper, 6—Lieut. H. James, Tagus, 19th May.

Volage, 28—Capt. G. B. Martin, C. B. 22d June sailed for Mediterranean. Passengers, Dr. J. Rankine, and Mr. Kerr, Assist.-Surg.—detained at St. Helens.

Wolf, 18—Com. W. Hamley, Jan. at Penang.

Paid off into Ordinary.

Challenger, 30th May arrived at Portsmouth from Rio; 12th June Paid off.

Clio, 18, Com. J. J. Onslow, 5th April sailed from Rio for England. 3d June arrived at Portsmouth; 17th paid off.

Druid, 46, Capt. S. Roberts, C.B.; 4th June arrived at Portsmouth; 5th June sailed for Plymouth; 18th June paid off.

Sylvia Cutter, 6th June, Portsmouth.

Winchester, 52, Capt. Hon. W. Wellesley, 24th May arrived at Portsmouth; 27th sailed for Chatham; 12th June paid off.

Commissioned.

Challenger, 15th June—Portsmouth.
Fair Rosamond, 31st May—Portsmouth.
Sylvia, 7th June—Portsmouth.

VARIETIES.

It is with much pleasure that we quote the following from the Hampshire Advertiser:—

Immediately previous to leaving the Downs, Rear-Admiral Mackau received the following address, which was transmitted to him by the mayor of Deal:

"*To Admiral Baron Mackau, commanding the French Squadron in the North Sea.*

"The mayor, constituted authorities, and inhabitants of the town and borough, cannot suffer the squadron under your command to take its departure from the Downs for the Port of France, without offering to the Admiral, and to the Captains, Officers, and crews of all the ships of which it is composed, a testimony of their esteem for the honourable, peaceable, and well-regulated conduct they uniformly maintained during the whole of the time they have been on this station. We cannot, at the same time, help expressing to you our regret at your departure, assuring you that the town of Deal will long preserve an agreeable and flattering remembrance of the French fleet, and the Officers, who had successively had the command of it. May success ever attend you, M. le Baron, and the squadron placed under your command. This is the ardent and sincere wish of the Mayor, Magistrates, and inhabitants of Deal."

Navy of the United States and its Distribution.

From the documents accompanying the Report of the Secretary of the Navy, we have compiled the annexed statement, shewing the present condition of this right arm of our national defence.—*New York Paper.*

SHIPS OF THE LINE.

Name and Rate.		*Where & when built.*	*Where employed.*
Columbus,	74	Washing. 1819	In ord. at B'n.
Independence,	74	Boston 1814	do. do.
Ohio,	74	N. York 1820	do. N. Y.
Washington,	74	Portsm. 1814	do. do.
Franklin,	74	Philadel. 1815	do. do.
N. Carolina,	74	Philadel. 1821	do. Norfolk.
Delaware,	74	Norfolk 1821	fit'g for sea do.
Alabama,	74	Portsmouth	On the stocks.
Vermont,	74	Boston	do. do.
Virginia,	74	Boston	do. do.
Pennsylvania,	74	Philadelph.	do. do.
New York,	74	Norfolk	do. do.

FRIGATES OF THE FIRST CLASS.

Name and Rate.		*Where & when built.*	*Where employed.*
United States,	44	Philadel. 1797	In Mediter'n.
Brandywine,	44	Washing. 1825	do. do.
Potomac,	44	Washing. 1821	In the Pacific.
Constitution,	44	Boston 1797	In ord. Boston.
Hudson,	44	Purchas'd 1826	do. N. Y.
Java,	44	Baltimore 1814	do. Norfolk.
Guerriere,	44	Philadel. 1814	do. do.
Santee,	44	Portsm.	On the stocks.
Cumberland,	44	Boston	do. do.
Sabine,	44	New York	do. do.
Savannah,	44	New York	do. do.
Raritan,	44	Philadelph.	do. do.
Columbia,	44	Washingtn.	do. do.
St. Lawrence,	44	Norfolk	do. do.

FRIGATES OF THE SECOND CLASS.

Constellation,	36	Baltimore 1797	In Mediter'n.
Congress,	36	Portsm. 1799	In or. Norfolk.
Macedonian,	36	Captured 1812	Rebuilding do.

SLOOPS OF WAR.

John Adams,	24	Charlestn. 1799	In Mediter'n.
Cyane,	24	Captured 1815	In ord. Phil.
Concord,	18	Portsm. 1828	In Mediter'n.
Boston,	18	Boston 1825	do. do.
Vandalia,	18	Philadel. 1828	In West Indies
St. Louis,	18	Washing. 1828	do. do.
Falmouth,	18	Boston 1827	In the Pacific.
Warren,	18	Boston 1826	Cst. of Brazil.
Peacock,	18	N. York 1813	do. do.
Lexington,	18	N. York 1825	do. do.
Erie,	18	Baltimore 1813	In ord Boston.
Natchez,	18	Norfolk 1827	do. Norfolk.
Fairfield,	18	N. York 1828	do. do.
Ontario,	18	Baltimore 1813	do. do.
Vincennes,	18	N. York 1826	do.

SCHOONERS OF WAR.

Porpoise,	12	Portsm. 1820	In the W. Ind.
Grampus,	12	Washing. 1821	do. do.
Shark,	12	Washing. 1821	do. do.
Enterprise,	12	N. York, 1831	Cst. of Brazil.
Boxer,	12	Boston 1831	do. do.
Dolphin,	12	Philadel. 1821	In the Pacific.
Experiment,	12	Washing. 1832	Norfolk.

RECAPITULATION.

Ships of the Line	12 x 74		888
Frigates of the First Class .	14 x 44		616
Frigates of the Second Class	3 x 36		108
Sloops of 24 guns . . .	3 x 24		48
Sloops of 18 guns	13 x 18		134
Schooners	7 x 12		84
Total number of ships .	51	—guns,	1978

The ships on the stocks, with the exception of the Pennsylvania and Savannah, could all be got ready for launching in ninety days, and some of them in sixty. The Savannah would require 120 days, and the Pennsylvania six months. The ships in ordinary are in various states of preservation, but most of them would require extensive repairs, before being ready for sea.

In addition to the force embraced in the preceding list, the framers and promiscuous live-oak timber for four ships of the line, seven frigates, four sloops of war, and three steam-vessels, are on hand, viz.: at Boston, two ships of the line, two frigates, and one sloop of war; at New York, one frigate; at Philadelphia, two frigates and one sloop of war; at Norfolk, two ships of the line, one frigate, and one sloop of war; at Washington, one frigate, and one sloop of war. Where the frames of the steam-vessels are in deposite, we do not find it stated. Contracts have further been made for the frames, &c. of three frigates and three sloops of war. If we include in the estimate of our naval force the ships for which the timber is already furnished or contracted for, the account will stand thus:—

	74's.	*Frigs.*	*Slps.*	*Schrs.*	*Steam vessels.*
In commission	1	4	9	7	...
In ordinary ..	7	6	6	...	...
On the Stocks	5	7	...	...	...
Frames on hand	4	7	4	...	3
Frames contracted for	...	3	3	...	...
Total	16	27	22	7	3

Besides the frames, above mentioned, and the timber properly belonging to them, there is on hand at the different Navy-yards, under the appropriations for repairs, and for other purposes, 75,120 cubic feet of live oak, 339,716 ditto white oak, 1,427,907 feet of plank, 7,770 knees, 421,045 cubic feet of yellow pine, 788,468 superficial do. do. 11,693 superficial feet of white pine, and 48,040 cubic feet of various knees.

There is also on hand 1,540 tons of iron, 652 do. lead, 114 do. copper, 335 anchors not in use, and 27 chain cables not in use.

There is also on hand, exclusive of what is on board of vessels in commission, 2,232 cannon and carronades, 228,908 round and double-headed cannon balls, 23,324 grape and canister, 540 tons loose grape and canister, 35,600lbs. powder, 198,382lbs. sulphur, 396,994lbs. nitre, 3,504 muskets, 5,703 pistols, and 5,248 cutlasses.

The *value* of the stores on hand at the different Navy-yards, on the 1st Oct. last, was as follows:—

	Dollars.
Portsmouth, (N. H.)	1,348,979 49
Boston	1,122,617 79
New York	1,494,143 08
Philadelphia	471,646 81
Washington	907,273 37
Norfolk	1,057,087 83
Pensacola	167,269 55
Total	5,579,917 92

The estimated expenses of the Navy, during the year 1833, are Dol. 3,176,766 87 In this calculation, provision is made for holding in commission 1 ship of the line, 3 frigates of the first class, and 1 do. of the second class, 11 sloops and 7 schooners, with an aggregate of 5,025 officers and men, viz. for the ship of the line 835 men, first class frigates 454 each, second class 388, sloops 188, schooners 56.

Launch of the Waterloo, 120 *Guns, at Chatham.*—At a very early hour, on Tuesday, the 18th June, there was a great influx of people at Chatham; and, as the morning advanced, steam-packets crowded in every part, and gentlemen's yachts, filled with elegant parties of both sexes, were seen coming up the Medway, from London, Southend, and other places. There were four steam-packets from London—namely, the Sovereign, the Royal Adelaide, the Hawk, and the Swiftsure, and the Kent steamer, from Gravesend, with inhabitants and visitants of that place. The men-of-war lying in that part of the Medway, and all the yachts, were decorated with a profusion of flags; an immense number of boats had collected; the shore, as well as the Dock-yard itself, was thronged with spectators; and as the hour appointed for the launch to take place (one o'clock) approached, the scene was one of an animated and interesting kind. The Waterloo was built on Sir Robert Sepping's plan of the round stern, and many improvements of other kinds in naval architecture have been adopted in her construction. She is pierced for 120 guns, the largest number carried by our first-rate men-of-war, of which class of ships she is considered the most perfect that has yet been built. Her dimensions are as follow:—

	Feet.	In.
Length on the gun-deck	205	5¼
Length of keel for tonnage	170	6
Extreme breadth	54	6
Depth of hold	23	2
Height of figure	56	6
Height in midships	50	6
Height of taffrail	64	2
Burden in tons	2,693 71 94	

From the peculiar build of the ship, and the ample room which she possesses for stowage, it is said she will be enabled to carry some hundred tons more than she is registered for. We annex the weight of guns, and the manner in which they are disposed:—

	Number.	Pounders.
Lower deck	30	32
Ditto	2	68(carronades)
Middle deck	34	32
Upper deck	34	32
Quarter deck	2	18
Ditto	14	32(carronades)
Forecastle	2	18
Ditto	2	32(carronades)

Sir James Gordon, the superintendent of the Dock-yard, had caused excellent arrangements to be made for the accommodation of the public; and too much praise cannot be given to the subordinates of the establishment, for the civility which they shewed towards people of all ranks. At two minutes past one o'clock, the props which supported the vessel, commonly called "the dog shores," were knocked away, and the ceremony of "naming" having been performed by Adam Gordon, Esq. a magistrate of Deptford, in the absence of Miss Beresford, daughter of the Admiral of that name, who arrived too late, this magnificent structure was consigned to her proper element, amidst deafening cheers from the multitude assembled within the yard, echoed most heartily by those on the water. She glided slowly but majestically from her building-place; and it is gratifying to state, that no accident of any consequence occurred. She was swung round, and in a few minutes was safely moored alongside the Southampton frigate, lying in ordinary. She will remain in the Medway, to be docked and coppered. After the launch, it being the anniversary of the Battle of Waterloo, (18th June,) some highly interesting siege operations were carried on by the troops of the garrison of Chatham, commanded by Colonel Sir Leonard Greenwell, C.B., &c., in concert with the Royal Engineers. One thousand five hundred men were posted in different parallels and trenches, and three hundred men as defenders in a redoubt, and temporary entrenchments. During the operations, three mines were sprung, the explosions of which had a very grand effect. The lines of least resistance were equal to ten feet, the mines were at intervals of nineteen feet apart, and the charges each equal to one hundred and seventy pounds. The concourse of people assembled on the occasion greatly exceeded that at the launch, many steam-vessels having arrived from London, crowded with persons, too late to witness the launch. Lord Adolphus Fitzclarence was present at the review only. Colonel Maberly, M.P. for the borough of Chatham, and Surveyor-General of the Ordnance, was also too late for the launch, but came on the heights to witness the siege.—*Ports. Her.*

The Ringdove, 16, was launched at Plymouth Yard, on Tuesday, 18th ult. Her dimensions are, we believe, the same as those of the brig Racer, now in progress of building in the same yard, on Captain Symond's principle, viz.:—Length on deck, one hundred feet six inches; extreme breadth, thirty-two feet four inches; tonnage, four hundred and twenty-eight tons. — *Portsmouth Herald.*

The launch of the Princess Victoria steam-vessel took place on Thursday, June 20, at noon, and was attended by a numerous and highly respectable assemblage, many of whom expressed themselves much pleased with the appearance and beauty of the vessel, and complimented the builder, Mr. Cunningham, on her construction and fittings, which are highly creditable to his ability and taste. She is of eighty-six tons burden, and has about eighty feet length on the keel, and twenty feet breadth upon deck, being intended for the Southampton Steam-packet Company's service, under the superintendency of Captain Knight. She was named by Miss Fitzhugh, and went off in excellent style, amidst the hearty cheers of her admirers.—*Ports. Her.*

A Court-Martial was held on board H.M.S. Ocean, flag-ship at Sheerness, on the 31st of May, and continued by adjournment to the 1st of June ult., to inquire into the cause of, and circumstances attending, the getting on shore of H.M.S. Serpent, 16, on the Main, near the South Foreland, on the morning of the 25th May, and to try Com. Symonds, of that ship, for the same. Vice-Admiral Sir John P. Beresford, Bart. K.C.B. Commander-in-chief at the Nore, presided, and the following officers composed the Court:—Captain Sir J. A. Gordon, K.C.B. of the Chatham yacht; Capt. Chambers, of H.M.S. Ocean; Capt. Jones, of H.M.S. Vestal; Captain the Hon. Wm. Wellesley, of H.M.S. Winchester; Com. Owen, of H. M. surveying-sloop Sulphur; and Com. Austin, of H. M. steam-vessel Salamander. Edward Twopenny, Esq. officiated as Judge Advocate. At half-past five o'clock on the afternoon of the first day, several witnesses remaining to be examined, the Court adjourned to the following day; and at three o'clock, P. M. on the 1st of June, the sentence of the Court was read, adjudging Com. Symonds to be admonished, and Mr. Newman, the Master, to be reprimanded, and admonished to be more careful in future. Sir James Gordon and Com. Owen, both members of the Court, were called as witnesses as to character by the Master, and they both gave him the highest possible character.—*Ports. Her.*

The Forte, 44, is ordered to take charge of the Pyramus, convict and receiving ship, going out from this port to Bermuda, from whence the latter, after discharging her convicts, will proceed to Halifax, to remain as a receiving ship.—*Ports. Her.*

Spontaneous Ignition of Coal.—We learn that the fine new frigate-built ship London, has been endangered, by having a large quantity of pyritous coal on board. Smoke was perceived issuing from the hold, which, after a most diligent search, was found to proceed from the coal in the hold (about 300 tons.)—The heat and vapour were so great, that Capt. Wimble applied for assistance from the Bankshall. Captain Jameson, (the Master Attendant,) and his first Assistant (Captain Harrington,) repaired on board, with buckets, &c. and it was resolved that the cargo should immediately be discharged, which, up to our writing this, continues to be pursued with unwearied zeal.—*Bengal Harbour, Nov.* 23. *Hants. Tel.*

The Zebra has been absent from England four years, having sailed under the command of Capt. Pridham, from this port, in May, 1829. She was employed for several months among the islands in the South Pacific Ocean, during which she had many hairbreadth escapes, and her crew suffered many privations, but she has not lost a man from any disease incidental to tropical or hot climates; and during the last fourteen months, she has been only in harbour eighty-three days, and only for the purpose of refitting, &c. During that period she has traversed 32,170 miles.—*Plym. Her.*

Immense American Ship.—There is now constructing at the naval yard, Philadelphia, the largest ship of war that has ever been built. She is to be called the Pennsylvania, and will carry 200 guns! Her complement of men is 1,400. Her best bower anchor weighs 10,171 pounds. She is 220 feet long by 53 broad. There are 34 beams, which are of live-oak. She has five entire decks—spar, orlop, and three gun-decks.—*Hull Packet.* [This does not agree with the American account in p. 424.—Ed.]

Immense Engine.—Recently a large and powerful steam engine commenced working at Little Town, a new colliery now sinking by the Earl of Durham. When the elastic force of the steam is equal to 50lbs. upon the square inch, it is calculated to be of 400 horse power. The length of the stroke is nine feet in the cylinder, while the outer end is making eight feet, together with the ordinary work of a main engine for drawing water. It works two sixteen inch set of rams, is of high pressure, and is propelled by six large boilers.—*Hull Packet.*

A fine colossal figure of his Majesty, King William the Fourth, standing fourteen feet five inches in height, of Portland stone, has been erected on the entrance-gate of the new Victualling Office at Stonehouse—*Ports. Her.*

Regattas.

The Torbay Regatta is fixed for the second of August; and, besides the splendid gold challenge cup, value one hundred guineas, offers a Ladies' cup, value £40, a Tradesmen's cup of £20 value, and a purse of fifteen sovereigns.

Clyde Regatta.—The Clyde Regatta commences this season on Monday, 29th July.

Our correspondent at Cherbourg informs us, that the inhabitants of that town are raising subscriptions, and taking other measures, to ensure a regatta for the noblemen and gentlemen of the R.Y.C. to take place this autumn, at Cherbourg, on a plan nearly similar to that which took place two years since, when the R.Y.C. honoured that town with their presence. In addition to the usual sports, it is in contemplation to give prizes for rowing matches. Our correspondent adds, that this regatta will be patronized by some of the most distinguished French nobility, who will gladly avail themselves of the opportunity to have the pleasure of meeting the gentlemen of the Club. It is even expected that upon this occasion Cherbourg may be honoured with the presence of royalty itself.

The Dublin Regatta will take place on the 1st, 2d, 3d, and 4th July, in Dublin Bay. The Marquis of Donegal is the Commodore, and Sir Robert Gore Booth, Bart., Vice-Commodore. On the last day of the Regatta, the Members of the Club intend giving a splendid *dejeune a la fourchette* to the fashionables of the day.—*Hants Adver.*

The Port of Plymouth Regatta, for this season, will take place on Wednesday, the 31st of July. The days for the Races are not yet fixed.—*Dev. Tel.*

PROMOTIONS AND APPOINTMENTS.

Promotions.

Captain—W. N. Glasscock.

Commander—Hon. E. Howard.

Lieutenants—J. H. Murray; W. D. Masters; — Seagrim; G. Wodehouse.

Appointments.

Alban—*2d Mast.* W. Parsons.

Albion, *Ord. at Leith—Boats.* R. Silvers; *Gunner* W. Hewett.

Anson, *Ord. at Leith—Boats.* J. Davis; *Gunner*, A. Orbell.

Ariadne, 28—*2d Lieut. Mar.* F. W. Bateman.

Ascension Island—*2d Lieut. Mar.* W. F. Maltby.

Asia, 84—*Master*, E. Codd.

Barham, 50—*2d Lieut. Mar.* W. Cosser; *Mid.* W. Harvey.

Blanche, 46—*Clerk*, Mr. Lyell.

Britannia, 120—*Assist. Surg.* D. Kerr; *Surg.* C. M'Arthur.

Caledonia, 120—*Lieut.* W. M'Ilwaine. *Capt. Mar.* F. I. Delacombe; *2d Lieuts. Mar.* H. D. Erskine, J. R. Jackson, W. R. Maxwell; *Midshipmen*, G. Mends, S. Moorish, B. Priest; *Vol. 1st class*, H. Hyllyer, R. Waddilove.

Challenger, 28—*Capt.* M. Seymour; *Lieut.* Seagrim; *Master*, J. M'Donald; *Purser*, J. P. Sargent; *Surg.* J. Kay; *Assist. Surg.* J. W. Lane; *1st Lieut. Mar.* W. White; *Clerk*, J. Jagoe.

Champion, 18—*Master*, W. Parker.

Cockatrice, 6—*Clerk*, J. Westwood.

Conway, 28—*Lieut.* Hon. P. P. Carey.

Donegal, 78—*Lieut.* G. S. Reynolds; *Mast.* J. Trivick; *Mast. Assist.* O. Dunn.

Druid, 46—*2d Lieut. Mar.* W. G. Mahon.

Duncan, *Ord. at Leith—Gunner*, J. Denham; *Boatsw.* J. Maxwell.

Fair Rosamond—*Lieut. Com.* G. Rose; *2d Master*, R. G. Willis; *Assist. Surg.* J. G. Williams; *Clerk*, J. M. Starke.

Forte, 44—*Com.* W. A. Herringham; *Lieuts.* H. Broadhead, R. B. Watson; *2d Lieut. Mar.* W. K. Shoveller; *Clerk*, Mr. Hillyer.

Gannet, 18—*Com.* J. B. Maxwell.

Isabella, *Conv. ship—Surg.* R. Dixon.

Lapwing—*Lieut.* J. G. Raymond.

Madagascar, 46—*Mast.* J. Martin; *Surg.* Dr. J. Rankine.

Malabar, 74—*Master Assist.* B. S. Scott.

Nymphe—*Gunner*, J. Faulkner; *Boatsw.* T. Walsh.

Ocean, 80—*Lieut.* M. Dixon; *Master*, J. Napier; *Surgeon*, A. Dodds.

Ordinary—*Portsmouth*, *Capt.* Hon. H. D. Byng. *Sheerness*, *Lieut.* A. S. J. Veitch. *Plymouth*, *Lieuts.* P. S. Lawrence, T. Williams.

Revenge, 74—*Lieuts.* G. Morris, C. Spettigue; *Clerk*, Mr. O'Brien.

Salamander, *Steam V.—Assist. Surg.* J. Morrison.

San Josef, 110—*Master*, J. Falcon.

Satellite, 18—*Mast. Assist.* W. C. Turnbull.

Seaflower, 4—*Assist. Surg.* G. Dunn.

Snake, 16—*Master*, J. Wood.

Spartiate, 76—*Lieuts.* A. G. Rothery; W. J. Collins; *Capt. Mar.* J. Whylock; *Clerk*, J. Connell.

Speedy, 8—*Clerk*, F. Mundy.

Sylvia—*Sec. Mast.* W. H. Eames; *Assist. Surg.* W. Patison; *Clerk*, Mr. Mitchell.

Talavera, 74—*Purser*, A. Brown.

Unicorn—J. Brocklebank.

Volage, 28—*Mid.* H. Bainbridge.

Coast Guard—*Commanders*, A. H. C. Capel, J. Hudson, J. Kains, D. Marsh, C. H. Seale, C. Smith; *Lieuts.* J. Read, W. Walsh;

Secretary, J. B. Hutchings, to Rear-Adm. T. Briggs.

Royal Marines.—Chatham, *Pay Capt.* T. Hurdle. Portsmouth, *2d Lieut.* W. O. M. Bellaris.

Midshipmen passed for Lieutenants.

College—C. R. Bamber, G. Blane, W. H. Broad, G. W. Broke, R. H. Bunbury, H. Croft, O. Cumberland, J. R. Dalyell, G. B. Dewes, D. C. Disney, J. Gordon, J. Hodgkinson, W. P. Jamieson, J. C. Pitman, P. H. Somerville, Hon. K. Stewart, S. C. Woolridge.

Seamanship—P. A. Allen, C. R. Bamber, H. N. N. Mottley, Hon. K. Stewart.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1833.

Continued from page 366.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
341 Active	Of Belfast	—	—	—	—	Uncertain.
342 Albion	Carter	—	—	Boscastle	11 June	
343 Argo	Richards	Bristol	Leghorn	Leghorn	4 June	Crew saved.
344 Barbara	OfGreenok.	—	—	—	—	
345 Bellona	—	—	—	At Sea	—	
346 Ben Lomond	Steam	Vessel	—	Frith Forth	4 June	All saved.
347 Blandford	Lucas	—	—	Portkerry	14 June	Crew saved.
348 Breeze	Chappell	Glasgow	Montreal	P. des Monts	21 Nov.	Crew saved.
349 Britannia	Of Teign	mouth	—	Off Wicklo'H	2 June	Abandoned.
350 Commerce	Of Poole	Fallen in	with, in	47° N. 24° W.	4 June	Abandoned.
351 Diana	Miller	Shields	Hemsworth	Yorksh. C.	12 June	Foundered.
352 Edward	Of Bristol	—	—	Severn Entr.	11 June	Crew and a passenger drwned.
353 Elizabeth	Scott	Liverpool	Rio	St. Antonio	17 Feb.	Crew saved.
354 Elizabeth	Nuttall	Honduras	Liverpool	Triangles	?	Crew saved.
355 Ellen	Jamieson	London	St.Michaels	Not heard of	since	14th Feb.
356 Emily	Graham	Sydney	—	Langlois I.	Jan.	Crew saved.
357 Faith	Porter	Singapore	Madras	Str. Malacca	Jan.	Crew saved.
358 Ferret	Stront	—	—	Nr. Boscastle	12 June	
359 Guyabro'	Bennett	Newfndld.	Torquay	Not heard of	since	26th Jan.
360 Hope	Ward	Liverpool	Miramichi	Nr Blackpool	13 June	Crew saved.
361 Hope	Morgan	Newcastle	Plymouth	Ramsgate	12 June	Sunk in Harbour.
362 Hope	Went on	Shore	—	Off Mobile	22 April	Supposed.
363 Hopewell	Leary	Seaham	Lynn	Trinity S.	10 June	Crew saved.
364 Hydra	Of Calcutta	—	—	Phillippine I.	1833	Crew arr. Manilla.
365 Industrie	—	Liverpool	Rotterdam	Lytham	13 June	One drowned.
366 Lady of the Lake	—	Belfast	Quebec	At Sea	May	
367 Lark	Purcel	StJohn'N B	—	At Sea	April	Schooner.*
368 Little Ann	—	—	—	—	18 May	Crew saved.
369 Martha	Patterson	Liverpool	Lerwick	—	15 June	Total.
370 Newbiggin	Smales	Stockton	Deal	Nr Galloper	14 June	Crew saved.
371 Norge	Barker	Liverpool	Tonsberg	Heysham	12 June	Crew drowned.
372 Oak	Cook	Sunderland	Cronstadt	Hog Island	May	Cw. & cargo saved.
373 Olive Branch	—	StJohn'N B	—	At Sea	April	Capsized. schooner
374 Viscount Palmerston	Gunn	Liverpool	StPetersbg.	Jutland	13 May	Crew saved.
375 Patrick	—	Newport	Cork	Hubberston Pill	14 June	
376 Robert	Brine	—	—	At Sea	April	
377 Selina	Barrett	—	—	At Sea	April	Abandoned.
378 Susan	Townson	O. Calabar	Plymouth	Prince's I.	Dec.	One drowned.
379 Syren	Roe	Cadiz	Newfndld.	At Sea	1833	Abandoned.
380 Thais	Wilson	Shields	Harfleur	Off Galloper	12 June	Crew saved.
381 Triune	Sulmond	Liverpool	—	Viana	—	Crew lost.
382 Tronto	—	Limerick	—	St.Mary's, N.	April	
383 Tweed	—	Jamaica	Halifax	Heneaga Rf.	April	Crw. & cargo saved
384 Union	Delany	StJohn'N B	—	At Sea	April	Waterlogged, schooner.
385 Unknown	A Brig	—	—	Racer Shoal	16 June	Sunk.
386 Unknown	A Brig	—	—	St. George's Channel	2 June	All lost.
387 Washington	Holt	Liverpool	—	Popoe, Africa	22 April	Crew saved.
388 William and Thom	Of Milford	—	—	St. George's Channel	14 June	Crew saved.

FURTHER PARTICULARS OF WRECKS.

Susan, Townson.—Left the Old Calabar River about the 7th Dec., and is reported to have been abandoned afterwards, from becoming water-logged.

Viscount Palmerston.—Filled with water after she stranded; was expected to be got off, but was totally wrecked afterwards. Crew saved.

James Sibbald.—The hull of this ship, mentioned in our last, was to be sold on the 15th Jan.

Faith.—Sailed from Singapore on 30th Dec., became water-logged at anchor, and was abandoned on her beam ends. Crew returned to Singapore.

Bellona.—A barque. The wreck of her was fallen in with by the Mary, on the 9th May, in lat. 40. N. long. 38. W. and set on fire. The Bellona was laden with deals, and lay in the track of homeward bound vessels.

Oak.—Driven on shore by the ice.

The following are sealing vessels of Newfoundland—Union, Olive Branch, Lark, Robert, Selina—and were lost at sea in the bad weather of April.

Little Ann.—The crew of this vessel were saved by the Amethyst from Cadiz to St. Andrews, N. Brunswick.

Lady of the Lake.—This vessel struck on some ice about the middle of May, while crossing the Atlantic, about 400 miles from Newfoundland, and filled immediately. The master, crew, and some passengers, took the boat, leaving about 160 passengers on board. They afterwards boarded the Harvest Home; but finding her full of water, made a hasty retreat, and some were drowned in attempting to return. One man who got into the boat from the latter vessel, which was afterwards picked up by the Lima, arrived at Liverpool.

Elizabeth, Scott.—Totally lost on the S. W. point of Isle San Antonio, Cape Verd Islands. Crew got to Bonavista.

The Benlomond Steam-Packet.—The loss of the Benlomond steam-packet occurred on Tuesday, 11th June, in the Firth of Forth, about a mile from Newhaven. For some weeks past she had been plying between Stirling and Newhaven, in opposition to the Stirling Castle. The low fares consequent on the competition have, during the fine weather, had the effect of inducing an immense number of passengers, on pleasure and otherwise, to sail with these boats, and on Tuesday morning no fewer than two hundred and twenty persons, most of them as cabin passengers, went on board the Benlomond for Stirling. She sailed about a quarter-past nine o'clock, and about five minutes after she had left the Chain Pier, smoke was observed by the steward to issue from behind the funnel. The alarm being given, Captain Allan immediately bore round to make for the Chain Pier, and also hoisted a signal of distress, when very fortunately the Lion steam-packet, which was about two hundred yards ahead, came to her assistance, as did also the Stirling Castle, which was lying at the Chain Pier. The safety of the passengers was, of course, the first consideration, and the greatest praise is due to Mr. Crone, of the Lion, and Mr. Gentle, of the Stirling Castle, (in absence of Captain Strathie, who had just gone ashore to breakfast,) for the great exertions they made to rescue the passengers of the Benlomond from their perilous situation, which, we are happy to say, was done without the loss of one life, or even one accident of any consequence. Most of the luggage was saved, but not the whole of it, for by the time that the last of the passengers were leaving the Benlomond, the fire was blazing twelve or fifteen feet above the deck of the vessel. The captain run the vessel ashore opposite Caroline park, about one mile west from the Chain Pier, for the purpose of scuttling it; but so rapid was the progress of the flames, that before this could be accomplished, the whole of the vessel behind the paddle-beams was burnt close to the water, and this, too, in less than forty minutes after she had left the Chain Pier, with two hundred and twenty souls on board! After burning to the water's edge, the hull sunk with the mast standing, at the distance of a quarter of a mile from the shore; and about six feet of the mast is now visible at high water. The fire was occasioned by an insufficiency of water in the boiler.

Ferret.—Foundered near King Arthur's Castle, about 5 miles below Boscastle. Nothing saved.

Albion.—Stranded in Boscastle Creek.

Unknown.—A brig, reported by the Frederyke, arrived at Ostend, about 300 tons, run down by the Ajax. All hands perished.

Robert M'Carthy.—Sprung a leak off the Smalls, and afterwards sunk in Hubberston Pill.

Barbara, of Greenock.—A stern-piece with this name on it, washed ashore near Blackpool.

Active, of Belfast.—A stern-piece, with name painted on it, washed on shore near Preston.

Argo, Richards.—Driven on the rocks at the entrance of Leghorn, after letting go her anchor; and during the night went to pieces, a gale blowing from the N.W.

Awful Disasters.—The Lima, Captain Mardon, sailed from Newfoundland on the 11th of May. On the morning of the 13th of May, in lat. 46. 20. long. 45. 50. when about four hundred miles from Newfoundland, being completely surrounded with ice, their attention was aroused by hearing a gun fired, shortly after which they descried a boat at some distance. The captain instantly hove to, till the latter came alongside, when he took the individuals in her on board. They reported themselves to be the second mate and twelve of the crew of the Harvest Home, Captain Hall (of Newcastle,) from London for Miramichi. They informed Captain Mardon, that on the 9th of May, the Harvest Home was struck by a piece of ice which stove in her bows. All hands were immediately put to the pumps, by which means they succeeded in keeping the vessel afloat for two days, at the expiration of which time the second mate and twelve of the crew quitted her in the long-boat, the captain and first mate having come to the determination of remaining on board. After they had been out one night, being loath to leave the latter in such a perilous situation, they returned to the vessel, and requested the captain and mate to leave her, but they persisted in their determination, saying, that "they would stick to her while a timber remained afloat." They had, however, got the jolly-boat ready, in case the danger should become imminent. The crew having again pushed off, they became bewildered amongst the masses of ice by which they were surrounded, and totally uncertain what course to steer. On the next day, they again fell in with their own vessel, which they had mistaken for another vessel. This time they found that the captain and mate had left her. Two of the crew now went on board; and while they were busy endeavouring to get more water and provisions, they were surprised at the sight of a boat, containing about thirty individuals, approaching in an opposite direction; they immediately boarded the vessel, having, as subsequently appeared, done so in the hope of succour. They proved to be the captain and crew, and part of the passengers, including two females, of the Lady of the Lake, (of Aberdeen,) bound from Belfast for Quebec, with upwards of two hundred passengers on board. Those who had boarded the wreck of the Harvest Home, when they saw the state she was in, with her hold full of water, made a simultaneous rush to return to the boat, which was at that moment pushed off, and several of them were precipitated into the water. One of them, however, was fortunate enough to make good his leap into the boat which contained the crew of the Harvest Home, and he has now arrived at this port, in the Lima. He states, that the Lady of the Lake struck upon the ice, and immediately filled, when the captain and crew took to the boat, leaving the sinking vessel crowded with the remainder of the despairing and shrieking passengers, to the number of one hundred and sixty, or one hundred and seventy. The crew of the Harvest Home state, that after they left their vessel the last time, they saw nothing more of the other boat. Several of the individuals who had fallen into the sea when the latter pushed off, were drowning, but it was impossible for them to render any assistance.—*Scotsman.*

VESSELS DETAINED BY ACCIDENTS, &c.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE DETAINED.	WHEN	PARTICULARS.
Downe Castle	Taylor	Sunderland	———	Helvoet	14 June	Dismasted.
Planter	Blackburn	Memel	Portsmouth	Elsinore	4 June	Been on shore.
Nancy	Taylor	Memel	Bristol	Elsinore	4 June	Been on shore.

VESSELS SPOKEN AT SEA.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE SPOKEN.	WHEN.	PARTICULARS.
				° °		
Ansley	Of Jersey	———	Rio Janeiro	1 N 13 W	1 April	
Antelope	———	Jersey	Rio Janeiro	3 N 22 W	24 Mar.	
Cawton	———	Liverpool	Bahia	4 N 23 W	26 Mar.	
Macclesfield	———	Liverpool	Australia	22 S 38 W	24 Feb.	
Margaret	———	Lisbon	Rio Janeiro	1 N 24 W	20 May	
Montrose	———	Liverpool	Antigua	45 N 16 W	8 May	

The following is a list of the men-of-war composing the Egyptian fleet in the port of Alexandria:—

Vessels.	Guns.	Pound.
1 Three-decker of . .	140	30
3 Two-deckers of . . .	100	30
1 Ditto of	90	30
6 Frigates of	56	30
1 Ditto of	60	42
6 Corvettes of	26	18
7 Brigs of	18	12
4 Fire-ships	—	—
1 Cutter	—	—
30	490	

Steam Bridge.—A floating bridge, worked by steam, has recently been opened at Saltash Ferry, Cornwall. The float forms a parallelogram of about 50 feet by 30 feet, open at both ends; the centre is occupied by two engines of six-horse power each, boxed over from end to end, so as to be entirely concealed externally; the engines work two wheels, on which rest two chains, which are laid from shore to shore, and traverse through the engine-room. On either side the engine-room is a clear space of 50 feet by 10, for carriages, horses, cattle, and foot-passengers. The prows or platforms for shipping and landing are four in number: they drop on the shore, and form almost a level platform. The whole was invented and executed by Mr. Kendle, the engineer, who constructed the floating bridge at Dartmouth.—*Hants. Adver.*

Letters from Fernando Po, dated 21st January, announce the removal of the Victualling Establishment at that island to Sierra Leone; and the sailing of the Pluto steamer, with John Salter, Esq. (the Agent Victualler) and family, for the latter place; together with the Charybdis, which ship conveyed also part of the establishment.—*Hants Tel.*

MOVEMENTS OF TRANSPORTS.

Amphitrite—Paid off at Deptford.

Arab—Lieut. W. C. Harris, on her way to England.

Flora—Lieut. Wesley, Portsmouth.

Hope—Lieut. J. Ryder, Deptford.

Maitland—Lieut. Spencer, 30th May sailed for Deptford.

Marquis Huntley—7th May arrived at Barbadoes.

Orestes—Lieut. Scrymgour, Woolwich.

Prince Regent—Lieut. C. H. Binstead, Deptford.

Wanderer—Lieut. A. Young, West Indies.

Births.

At Trematon, the lady of Captain John Jervis Tucker, of a son, still-born.

On the 19th inst., at Worthing, the lady of Captain Fraser, R.N., of a daughter.

At Carisbrook, Isle of Wight, on the 15th inst., the lady of Lieut. Thomas Hewett, R.N. of a daughter.

At Brighton, the lady of Captain Edmund Palmer, R.N., of a son.

The lady of Lieut. Thomas Fynmore, R.M. of a son.

Mrs. Williams, wife of Mr. J. Williams, of the Preventive Service, Felpham, of a daughter.

The lady of Lieut. Sampson Marshall, of his Majesty's Dock-yard, Portsmouth, of a son.

At Southsea, the lady of Captain Harrison, of the Royal Marines, of a son.

Marriages.

At Dover, R. W. Hawkes, Esq. Royal Marines, to Ellen, daughter of Major Petley, Royal Artillery.

On the 10th inst., at Walcot Church, Bath, by the Rev. George Gardiner, M.A., Captain Norwich Duff, R.N., to Helen-Mary, only child of the late J. Shoolbred, Esq. M.D. of Marlborough-buildings, Bath.

At Bishop's Tawton, T. Gorrell, Esq. Surgeon, R.N., to Mary, eldest daughter of the late Rev. D. Ross, of Newport, near Barnstaple.

At Falmouth, Lieut. Dicken, Commander of his Majesty's Packet Reindeer, to Emily-Ellen, youngest daughter of Henry Williams, Esq. of Falmouth.

At Christ Church, Marylebone, by the Rev. J. Richardson, LL.B., Maria, second daughter of the late P. Richardson, Esq., and niece to the late Lieut.-General Richardson, to John Jackson, Esq., R.N.

At Plymouth, Mr. J. C. Touzeau, of his Majesty's cutter Ranger, to Elizabeth, eldest daughter of Mr. John Hannaford.

At St. Mary's Church, Bryanston-square, London, Charles Robert Dashwood, Esq., Lieut. R.N., eldest son of Rear-Admiral Sir Charles Dashwood, and nephew of the late Lord Kingsale, to Julia, eldest daughter of J. E. Hovenden, Esq., of Gloucester-place, Portman-square.

Deaths.

At Newton-Ferrers, Mr. Loud, Master, Royal Navy.

At Mansion-Row, Brompton, Major Augustus Keppell Colley, of the Chatham Division of Royal Marines, aged 53 years.

At Hastings, Sir John Evelyn, Bart., First Lieutenant on the reserved half-pay of the Royal Marines. He has been nearly forty years unemployed.

In Lower Belgrave-place, Rhodes, J. Rhodes, Esq. R.N.

Suddenly, on the 31st December, at Fernando Po, by breaking a blood-vessel of the lungs, Mr. Henry Johnson, Acting Purser of the Favourite.

On Thursday, the 13th inst., at Islington, James Steenbergen, Esq., Royal Navy, aged 60.

In February last, aged 24, H. J. Collings, Esq., Purser, late of H.M.S. Winchester. He was one of the unfortunate passengers on board H.M. brig Calypso.

On Sunday, the 9th inst., at Edinburgh, Captain John Mundell, R.N., who, in public, as in private life, was beloved and respected by all who had the pleasure of his acquaintance. He has left five sons, and a wide circle of relations and friends, to lament their loss. As a father, he was most affectionate, and as a friend, sincere. The navy has sustained the loss of an excellent officer, and society of a truly upright and charitable man.

At Benson, Oxon, Commander N. Cæsar, Corsellis, aged 70.

At Florence, on the 3d inst., Lieutenant Frederick Dickenson, R.N., aged 49.

At Eurdisley Park, Herefordshire, on the 16th, Lieut. R. C. Phillips, R.N.

Lieut. C. H. Bowen, R.N., being the fifth brother who was either killed or died in his Majesty's service. He died universally regretted.

In February last, in the 30th year of his age, Commander Henry Maxwell Griffiths Colpoys, youngest son of the late Vice-Admiral Sir Edward G. Colpoys, K.C.B. He was returning home from the Winchester, in which ship he served, beloved by all ranks; and, unhappily for his family, embarked on board the Calypso packet, which has never been heard of since. Thus completely has the name of Colpoys been swept from the navy list, in which it so long held a distinguished place.

On Sunday the 9th, at his residence on the Quay, Barnstaple, in the 83d year of his age, John Wickey, Esq. Admiral of the Red.

The remains of Vice-Admiral Sir Henry Hotham, K.C.B., late Commander-in-Chief in the Mediterranean, were interred with military honours on the 29th April, in the burial-ground on the Quarantine Bastion, Malta.

At his residence, Highfield-House, near Southampton, on the 23d inst., after a short illness, Vice-Admiral Sir Edward James Foote, K.C.B., aged 66.

Suddenly, of a fit of apoplexy, on the 15th inst., in the 43d year of his age, the Hon. Captain Thomas Roper Curzon, Royal Navy, of No. 6, Cumberland-street, Portman-square, second son of the Right Hon. Lord Teynham.

At the Royal Hospital at Haslar, the Hon. Edward Bruce, son of the Earl of Elgin, late Midshipman of H.M.S. Belvidera.

On the 17th inst., in Lake-lane, Landport, Charles Chaney Grout, Esq., Purser, R.N., aged 76 years.

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&c.

AUGUST, 1833.

HYDROGRAPHY.

Note.—All bearings are Magnetic, unless otherwise stated.

52.—AUSTRALIAN NAVIGATION. *Inner Passage to Torres Strait, recommended by Capt. P. P. King, R.N.*

THE following letter, which we have received from Captain King, pointing out the propriety of vessels adopting the "Inner Passage" on their way to the northward from Sydney, instead of endeavouring to penetrate the "Barrier Reefs" by any of the passages through them, is particularly intended for the attention of navigators who frequent that part of the world; and coming from so high an authority as it does, is entitled to the utmost confidence:

To the Editor of the Nautical Magazine.

Port-Jackson, 1st December, 1832.

SIR—The United Service Journal for last May contains a letter from Captain Horsburgh, in recommendation of a passage through the Barrier Reefs, on the eastern coast of Australia. At the time it appeared, I was on the point of leaving England, and had not leisure to make any comments upon it. Since that, however, I have read in your most excellent work, (No. 3, p. 146,) a notice of a chart published by Captain Horsburgh, illustrative of the above passage, and your opinion upon it, "that the proper way of penetrating the Barrier reefs has now been ascertained, and that with the chart before the eye it will be a matter of no great difficulty." I therefore direct myself to your pages, as well because the subject of my communication appertains more to the character of your work, as because nautical men, for whom it is published, and to whom only my observations are addressed, will understand the real purport of my communication, and not suppose that I am presuming to oppose myself without reason to the opinion of an hydrographer, whose pre-eminence has been long ago established, and to whom I have ever looked up with the highest respect and admiration.

Captain Horsburgh's chart contains the eye-sketch (for I have the authority of the person undermentioned, who drew it, and communicated it to Captain Horsburgh, to call it so,) of a passage through the Barrier reefs, that was discovered by Mr. Robert Towne in the year 1827,* at which time he commanded the brig Bonavista, bound from Port-Jackson to the Mauritius. Having made the passage, he returned to Port-Jackson, and again loaded for the Mauritius, and sailed, with the intention of again passing through the opening he had discovered on his former voyage. The Bonavista was, however, unfortunately wrecked upon Kenn's Reef, where the crew remained several weeks, when they were taken off by the ship Asia, commanded by Mr. Stead, bound through Torres Strait, by the route of the Eastern Fields and Murray's Island. By Mr. Towne's advice, however, and pilotage, he passed through the Bonavista's opening, instead of going to the northward. Besides this (the Bonavista's) opening, now called Stead's passage, there are two others, that have since been used by Messrs. Grove and Winter, whose names they respectively bear on Captain Horsburgh's chart.

Of the superiority of this opening in the Barrier Reefs, over that at Murray's Island, there exists not the shadow of a doubt; an examination of the chart will at once point it out to the practical navigator; and, therefore, granting so much, the object of this communication is to recommend another route, which I consider to be as far superior to Stead's (or rather Towne's) as Stead's is to that by Murray's Islands.

I allude to the inner route—entering the Great Barrier reef at Break-sea-spit, and keeping within it, with the main land on board, to Torres Strait. It was first used by the brig Cyclops in the year 1812, and three years afterwards by Lieutenant Jeffries, of H.M. brig Kangaroo, (see Horsburgh's Directions, pt. 2, p. 585.) In the years 1819, 20, and 21, a survey of the coast and adjacent reefs was made under my directions, the charts of which were published by the Admiralty in the year 1825, and particular directions for its navigation are contained in the appendix to the account of my voyage.† Having therein given all the information that is necessary for its navigation, it need not be repeated here; my object being merely to remind the navigator that such a passage exists, and to state the advantages that, in my opinion, it possesses over all others for ships bound through Torres Strait.

There are two very great drawbacks to the outer passage, both of which are of such consequence that any route unattended by them, provided the voyage be not much lengthened, would be preferable. I allude, first, to the dangers of the nightly navigation among the numerous reefs which are scattered over the space of sea included between New Caledonia and New Holland, to the northward of the latitude of 25 degrees; and, secondly, to the possibility, nay, the probability, of thick weather preventing the sight of the land-marks, or, of not being able to procure an observation for the latitude, without which no prudent navigator would feel justified in venturing to bear away to leeward, for any *particular* passage through the Barrier Reef.

As to the coral reefs, which exist in the direction of the outer route, they are very numerous; the position and extent of many are very little known; and where they are well ascertained, their vicinity is dangerous, from the strength of the currents and tides which sweep round and *over* them. There are dangers which the greatest care of the most practised navigator cannot provide against; and many fatal instances have already occurred to ships attempting this passage, without the shadow of blame being attributable to the master of the ship.

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* The ship Lalla Rookh passed through an opening in the Barrier Reef, in this neighbourhood, two years before the Bonavista, but no plan or report was made, by which it could be found or recognized!

† Survey of the Intertropical Coast of Australia, 2 vols. 8vo. Murray. London. 1828. Also, Horsburgh's Directory, pt. 2, p. 587. These directions have also been printed in the forthcoming Annual Directory for 1833, published in the colony of New South Wales, for the convenience of the masters of ships who cannot otherwise procure them.

As it will be many years before the existence and position of these known and unknown reefs, as well as the set of the currents in their vicinity, can be well ascertained, a route that will not be subject to these nocturnal dangers must be advantageous to the commercial marine. Such a one is offered by the inner route to which I have above alluded. I am satisfied that it does not lengthen the voyage two days: it is free from all deep-sea dangers, and it releases the navigator from all anxiety for the safety of his vessel, and the lives of those who are under his charge. It may appear presumption in me to praise my own work, when I say that it has been carefully and correctly performed; but I will assert, that the greatest care and exertion were bestowed upon the survey, to make it as correct as circumstances admitted; and I unhesitatingly venture to promise to those who will carefully follow my tracks, and attentively pursue the directions which I have given, that no accident of a local nature shall happen. What Providence may direct, or carelessness occasion, cannot be attributable to me. In recommending the route, I do it in the full assurance of its being advantageous to navigation; that it releases the commander from a considerable degree of anxiety, and may eventually prove the means of extending our colonial possessions within the tropical regions of this continent, of which we, as yet, comparatively, know nothing.

In order to use the inner route, it is best to pass round the extremity of Break-sea-spit, and follow the coast-line, at a reasonable distance, to the Percy Islands, by Captain Flinders' chart. From the Percy Islands to Torres Strait, my charts (contained in sheets 1, 2, and 3) must be used. Between the Percy Islands and Cape Grafton there will be no necessity to anchor, if the weather be fine; but if bad, there are plenty of secure anchorages that may be occupied. After passing Cape Grafton, the ship must be anchored every night; and, for the generality of vessels, six days' run will carry the ship through Torres Strait. In the interval, anchorage may be obtained without difficulty, and, for the greater part of it, *at any moment;* for the depth is always moderate, and the bottom excellent. A run of four or five miles will, in most parts, provide a sheltered anchorage, if greater shelter be required; but this will in most cases be only necessary for small vessels.

In the directions appended to Captain Horsburgh's plan, he has done me the honour to refer to my chart for the navigation of the coast between Cape Grenville and Booby Island. Now, from my own experience, the most anxious portion of the inner route is that very space; because, from there being wide spaces void of reefs, the islets and keys are not visible from each other, (which constitutes the principal convenience of my inner route,) and there is always so deep a swell as to oblige a ship, when she anchors, to run to leeward of the islands or reefs. This, as I have before said, is not the case to the southward of Cape Grenville.

Trusting that the insertion of this letter in your valuable Magazine may lead to the adoption of the in-shore passage to Torres Strait, I feel convinced that its own merit and advantages will afterwards insure its acknowledged superiority over any of the outer routes.

I have the honour to be, Sir,
Your very humble servant,
PHILLIP P. KING, Captain, R.N.

53.—REMARKS ON THE PASSAGE TO, AND NAVIGATION OF, THE NORTHERN COAST OF BRAZIL. *By Capt. The Hon. W. Wellesley, R.N.*

The most eligible situation for H.M. ships on the West India station to start from, to visit the north coast of Brazil, is Bermuda, because it is the furthest point on that part of the course, and to the eastward; and the best time of the year is the winter season, or from November to March, because strong westerly winds are prevalent, which will enable them to get so far to the eastward as to make a fair wind of the N.E. trade, when they get it.

On quitting Bermuda, a due east course should be made, if any thing, inclining rather to the northward, so as to be sure of not getting too soon into the trade, which extends in the summer season nearly as far as Madeira. The winter months are also the best for making the coast: the weather, although rainy, is clear, and the winds are so moderate that any part of the coast is safe to anchor on. The currents, also, (for what reasons I know not,) are said to be less strong at this season.

Having attained the longitude of 46° W. steer a S. or S. b. E. course, to get through the variables as soon as possible. They extend, according to Horsburgh, in the winter months, over a much smaller space than at other seasons. The variation will keep the ship gaining to the eastward, and the N.E. trade (which will be found at about east) will allow her to be hauled up a point or two, should it be found necessary. When the N.E. trade is found, a course must be steered, to arrive at the meridian of 40° W. on the equator.

If the passage be making in the summer time, it will be better to keep, if possible, well to the northward and eastward, until 40° W. is attained, in case variable winds should be met with, and the ship be driven to the westward. I experienced no current whatever until I got down near the equator, when a slight westerly one was perceptible, but it might have been owing to a wrong allowance being made for variation, which was found to decrease rapidly on our approaching it. It is to be borne in mind, also, that the variation changes from west to east, a little to the northward, or on the equator. I crossed it in 40° W. and I am convinced, that, to make a quick passage, it should not be passed further to the eastward. The English traders cross it in from 40° to 42°, and this enables them to steer more directly for the land; whereas if it is crossed in 38°, a course must be steered not very different from the *trend* of the coast, whereby a vessel is liable, should a westerly wind spring up, (not an unlikely occurrence,) to get in with it at a part that may not be desirable. Sometimes the merchant traders cross it in as far as 43° W.

In a subsequent cruise which I made on the line, I found a current from W.S.W. to W.N.W., setting sometimes at the rate of a mile an hour; but its strength depended on the distance from the land being much less in 37° W. than in 43° W. A greater allowance should therefore be made the further it is crossed to the westward.

There is no difficulty in navigating the northern coast of Brazil, if a proper attention and caution be used.

A strict masthead look-out should be kept, the lead should be constantly going, and you should be distrustful of your distance from the land both day and night!

It is very requisite, also, to know the tides, and I shall therefore at once give the time of high water, at full and change, of the places I visited, together with their latitudes and longitudes, and the variation of the compass.

Name of Place.	Latitude	Long.	Bearings from Anchorage.	Time of High Water, F. & C.	Variation.	REMARKS.
Seara	Point Macarisse. 3° 38' S.	38°30'W.	Point Macarisse S. 79° E. Flagstaff on Fort S. 34° W. 5½ fathoms.	4 h. 30 m. P.M.	3° 32' W.	Very little tide in the bay. The variations which follow ought not to be relied on as very correct; they are the result of one observation, with a defective Azimuth compass.
St. Anna Island	Light-House. 2° 15' 10" S.	43°40'18" W.	St. Anna Light, W. b. S. ½ S. Mangrove Point, S.E. ½ E. 7 fathoms. A very bad anchorage inside the reefs.	6 P.M. Not quite certain	2° 24' E.	The light-house is not on the most northern part of the island. The tide sets very strong into the bay. We found the flood to set at E.S.E., and the ebb at W.N.W., nearly two miles per hour. The bright part of the light appears about every 45 seconds.
Maranham.	Fort St. Antonio. 2° 29' S.	44°20'W.	Fort St. Antonio, S.E. } 16 fathoms Fort St. Mark's, E.N.E. } 2d Fort Antonio, E. ½ S. .. Fort S. Mark's, N.E. b. E.	6·20 P.M. On the one	2° E.	I consider these two anchorages the extremes of the good ground—the 2d I should prefer. The Sapphire never lost an anchor, whilst the vessels near her generally did. Remember that the tide in the harbour makes at least half an hour before it does outside.
San Joao Island	1° 16' 43" S.	45° W.	E. of Island, with the shoal off it, E. b. N. ½ N. West end, S. ½ E. in 9 fathoms.	6·24 P.M. Not quite certain	1° 24' E.	A better anchorage is about a mile off shore, and woody point not open of a river to the southward of it: here the tide runs very strong N.E. and S.W.
Mount Guarapi	0° 21' S.	46° 2' W.				This latitude and longitude is from a French captain, who was on the coast at the same time with Sapphire. I believe the data to be correct, because, on his arrival at Para, his latitude and longitude came out within a mile of Captain Foster's.
Selinas	0° 33' S.	47° 20' W.	Selinas, S. b. W. ¾ W. Macussani, W.S.W. Atasia, about S. 7 fathoms, bad anchorage.	From 7 to 7·30 P.M.		The best anchorage is the pilots' station S.E., in from 9 to 13 fathoms water, and not less than four miles off shore. Remember that during the rainy season, from December to May, the tide along the coast was constantly from S.E. to E.
Port Tigoca	0° 32' S.	47° 50' W.		From 10 to 10·40 P.M. on the Braganza Bank		From the French Captain:—It is the nearest point to the Braganza shoals. A good pilot gave me 10 as the time of high-water. Captain Courtney says in his remarks 10·30, and the English traders take 10·45.
Para	Captain Foster. 1° 28' S.	48° 30' W.		12 h. 5 m. P.M.	2° E.	This high-water is what the master observed personally. Captain Courtney says 6·30, which is manifestly incorrect, because if it was at that hour vessels would not carry a regular tide up the river, which they do.

The best part of the coast for a newcomer to make is the "Lançoes Grandes," or great sheets; because the whiteness of those sand-hills is so remarkable, and extend so far.

They commence in about 42° 45′ W. and terminate in 43° 12′ W. Run boldly for the centre or western extremity, and you will probably at the same time make the green country about the Mangoes point.

The River Perjuicas may be said to separate the Lançoes Grandes from the "Lançoes Pequenos." It has a long spit running from it, formed, as all the banks, nay, even the islands, on this coast are, by the tide of the river meeting the current of the sea. I crossed this bank at night-time in five fathoms, and the Mersey I am told did so in 3½, but in seven fathoms a ship will be quite close enough.

If the coast be made about the Perjuicas and Lançoes Pequenos, or "small sheets," soundings will be struck in 19 or 20 fathoms, and soon after in 13; and from thence regular bottom will be found in 10 or 11 fathoms, until the vessel is close enough to haul off, and steer along the land. The land hereabouts is green, interspersed with sand-hills. It is low and irregular; but in one place there is an extent of a mile or two of white sand, crowned with green of a regular height, and this I suspect is the part from whence the name Lançoes Pequenos was derived.

If the land be fallen in with so far to the eastward as Seara, it will be *higher* than any to the westward, and the magnificent mountains some leagues inland (the only fine feature on the northern coast of Brazil) will be seen. Point Macorissi, which forms the entrance of Seara, may be known by its being a sandy bluff, terminating rather suddenly. But, upon whatever part you advance, it will be needless to approach nearer than six or seven miles, until, in fact, it is just clearly discerned off the deck, that is, if your object be to make a passage.

If you come upon it towards the evening, and have run sufficiently near to make it out, as has been just said, N.W. b. W. ½ W. will not be more than a safe course to haul off on for the night, or you may stand off to 22 fathoms in about 2° south, and in to 17 fathoms. It is seldom, under any circumstances, that vessels find themselves further off the land than they expected in the morning.

I was in less water than 10 fathoms the whole of the first night I was on the coast, but I would not willingly go so near again, being sensible not so much of the danger as of the inutility of such a close approach.

I have reason to believe, that the land from the Perjuicas to St. Anna's light-house is further to the northward than it is laid down in the charts, and, perhaps, independent of the regular flow which sets directly on the coast, and runs an hour longer than the ebb, there may be an undertow always running to the westward.

SAILING DIRECTIONS FOR MARANHAM.

It is supposed then that the land is made in the morning about the Lançoes Grandes. You will be running down to near the land probably on a W. b. S. course. Having seen it clearly, haul off to W.N.W., and, having arrived at their termination, you will run about ten or fifteen miles along a coast nearly quite green, the "Mangoes Verdes." From the masthead, St. Anna's light-house will be in sight, as you run along, bearing perhaps about S.W. b. W. It will be seen before the island on which it stands, and makes like a vessel under sail. You are not sure of making the island itself until "Mangoes Verdes" point bears S. b. W., and it is essential to bear in mind, that the light is not on the northern extremity. The dangerous shoals which run in a N.E. direction, off it, will now be made out; and if you think the flood is setting you in, haul off in time to N.W. b. W.

The tide sets remarkably strong into the Bay of San Jozé. The first time I ran along the coast, it set me inside the reefs, and obliged me to anchor in five fathoms; and I was compelled to stand out on a N.E. course, to get clear of them. The breakers, however, always show themselves. They should be rounded in not less than 14 fathoms.

Having brought these dangerous shoals abaft the beam, a W. ½ N. course may be steered with safety until the "Coroa Grande" breakers are passed. Lieut. Hewett recommends a N.W. b. W. course, but I steered W. ½ N. on the flood in perfect safety, making the two breakers; and steering the same course upon the ebb, I was obliged to keep away W.S.W. to make them.

The Coroa Grande shoals always break; and I think it better to make them, because you get a fresh departure, which is advantageous if night be coming on, and you wish to anchor. If you do not wish to make them, W.N.W. may be steered for 15 or 20 miles, and then W. until "Itacalomi" is seen ahead. This mountain is the highest land on the coast, and makes at first like a small round island. Almost immediately afterwards the adjacent land appears, and then it takes something of the shape of the quoin of a gun. I think fifteen miles the very utmost distance at which this land can be seen, and it is likely you will not be more than ten or twelve miles off when it is reported from the masthead. The less water you have, the closer you will be to it.

If, in approaching, you should have as little as nine fathoms, or less, haul off to the south, and gradually keep away again to S.S.W., when you deepen the water, which course will take you up to St. Mark's Fort. If, on making it, there should be a depth of 14 fathoms, S.S.W. may be steered at once. In running up this course, bear in mind that the flood sets towards Alcantara, and over the Cerca Bank, which will be mentioned hereafter, and the ebb, on the contrary, will check you over to the middle bank, and towards the edge of the Coroa Grande.

Look out now for St. Mark's Point ahead; it ought to bear from S. b. W. ½ W. to S.W. b. S., and if you are in the centre of the channel, you will hardly get soundings with the hand-lead; if you have as little as nine or ten, you will be upon the edge of the middle bank, and, as a precaution, should keep half a point or a point more to the westward: 14 fathoms is a very good depth to run up in all the way. I have had no soundings until the anchor was let go off Fort St. Antonio, in that depth.

The land about St. Mark's, when first seen, makes like two small islands, the easternmost one having two sand-hills upon it, which look like two roads. The round fort and flag-staff soon appear, for which keep the ship's head, and Fort St. Antonio will be seen like a long low red house, a little to the westward of St. Mark's. When you are within a mile of this latter fort, run along the land until you bring it to bear N.E. b. E., and Fort St. Antonio E S.E., then drop your anchor in from 10 to 14 fathoms.

When near the anchorage, the only danger to be apprehended in a large ship, is from the Banca de Cerca, which lies about a league off shore, and the northern point of which lies about west from St. Mark's. Unless there be a very strong tide running, or the ship is beating up, you do not come near this; if you should, however, the soundings decrease very gradually, and indicate its vicinity.

In beating out, the pilot took the Sapphire over its north end in 5 fathoms; and at low water there may be over its centre as little as 16 feet; but of this I am not positive. It lies somewhere about north and south, and one of the marks for clearing it is, not to shut in with Point Ataki the two small islands which lie off it. But I repeat, that in common cases it does not lie within your track.

It seldom happens that vessels have to beat from Itacalomi to Maranham, the wind being almost constantly to the eastward; but they have to beat out usually. One tide ought to bring the mount to bear from W.N.W. to W., when the pilot leaves.

They go about in from 9 to 12 fathoms on either side; twice we were off the Carnaveiros or Pirajuba banks (which extend out further than laid down) in six. I always found Baron Roussin's charts the best to go by; the soundings are correct—perhaps he gives a little too much water in certain places. His details of the coast, such as the entrance to rivers, and other minutiæ, are sometimes erroneous; but it must be recollected, that his was a survey made under sail. I do not approve of Lieut. Hewett's directions for Maranham; the marks which he gives for the eastern channel took both the Sapphire and Mersey through the western; moreover, that to the eastward is never used by the pilots, nor by any but small coasters. I have no hesitation in saying, that, having once sighted Itacalomi, it would be difficult to get a ship into the eastern: so much simpler, and more direct, is the route by the western channel.

Let it be borne in mind, that the middle bank is in reality a continuation of the Coroa Grande shoal, with a channel of from seven to nine fathoms, dividing it from the main body, which channel is called the eastern one. Lieut. Hewett,* by his directions, would lead one to suppose that it is the one in which a vessel is most liable to enter, whereas the very reverse is the case. Let me state here, in case of mistakes, that it was by getting no soundings that I discovered I was running in the western, when I supposed I was running in the eastern passage; and I found out by the Mersey's log-book, that she had more water than she ought to have had, in fact, more than exists in the eastern one, if she had been running in it. The fact is, that Lieut. Hewett's marks are too indistinct, to one who does not know the land, to run by them with certainty. I give the preference, therefore, to Baron Roussin's.

I have heard that Colpoys' Bay is unhealthy, owing to the mangrove trees in its vicinity. I should prefer the roadstead to either the inner harbour or it, were it not for the fear of losing one's anchors.

DIRECTIONS FOR SEARA.

Seara cannot be called a port, nor in any but a tropical climate would it be thought a secure roadstead. I believe it to be perfectly safe, particularly from December to May, and we have the precedent of several large ships, namely, the American frigate Constitution, during the war, and, soon after, the Inconstant and Isis English frigates, having laid there with impunity.

When bound for Seara, run down in the latitude of Point Macarisse, to which give a good berth, until the castle bears S.W., then run down direct for it until Macarisse bears E.S.E.; do not go any farther in, until a pilot comes off, which will be in a catamaran. There are three or four high mountains about five leagues to the S.W. of the town, which may be seen when nine and ten leagues in the offing, by which the port of Seara is easily distinguished.

I have before said, that Point Macarisse is a sandy bluff, terminating abruptly enough at the sea. If you know your longitude nearly, it cannot well be mistaken, and the land on this part of the coast is tolerably high. Running in towards it, you will discover a reef breaking off; and inside of it, a good berth will open the town, and see the steeple, &c.

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* It should be remembered, that Lieut. Hewett's plan was made nearly twenty years ago, and that in no part of the world, probably, are greater changes going forward than on the north coast of Brazil.

From 11 and 10 fathoms, (standing in for the town,) you will shoal your water to seven and six, when you may either anchor or heave-to, and wait for the pilot, should he be coming off. If there are any merchant vessels lading, they will be well to the westward, protected in a small degree by a reef of rocks.

The landing is very difficult and uncertain. It can only be effected from half-tide to half-tide, and then by the help of the town's-people, who, with their negroes, are in attendance, to carry you out of the boat in a chair. This is owing to a reef of rocks (round either end of which is the boat-passage in) that lies in a direction parallel with the beach, and about three hundred yards from it: these begin to appear at half-ebb, and then make a kind of breakwater until half-flood, when the water, dashing over them, creates a surf in which it is impossible for a boat to live.

The pilotage charged for the Sapphire at Seara was eight Spanish dollars.

From this place I steered a N.W. ½ W. and N.W. course, along the land, at not more than four miles' distance, in from 13 to 11 fathoms, until I came to the village of Curn, a distance of about thirty miles; when I got abreast of it, the decrease of soundings to 9 and 7 fathoms warned me to haul off. There is a heavy breaking shoal running off the point on which this village stands, and, in case any one not knowing his longitude should make it, it may not be amiss to state, that we saw catamarans, with their sails, hoisted to dry on the beach, which had exactly the appearance of large boats sailing upon a river, until the regularity of their distance, and a nearer approach, dispelled the illusion.

Hauling out from Curn, the water did not deepen for a considerable time, and I believe we were on the eastern extremity of the shoal which surrounds the point of Jericocoara. I made Curn to be in latitude 3° 28′ S., longitude 39° 0′ W.

(To be concluded in our next.)

54.—Directions for the Bay of Islands, *New-Zealand, by* Mr. David Duncan, *late Master of H.M.S. Zebra.*

In sailing for the Bay, from the westward, make (if possible) the North Cape, lat. 34° 26′ S. long. 173° 00′ E. Shape your course E.S.E.; but if the wind is off the land, keep half a point to the southward, which will bring you (after sailing 70 miles) abreast of Point Pocock, (Cape Wiwika in the chart;) if the wind is out of the Bay, you may stand close over, from shore to shore, until you pass Paroa Bay. Keep the lead going, and go about when in 7 fathoms: by so doing, you will avoid the Brampton Shoal, called Manowa Roroa. Keep the Missionaries' house open with Great Island.

In coming in from the northward, or N.E., make Cape Brite, Cape Rakoua, on the eastern side of the bay, which is known by a rock called Persey Island, through which a hole is perforated by the sea. In going in with a fair wind, keep the left-hand shore on board, by which you will have deep water. After passing Kororodica Point, shorten sail, and anchor in six or seven fathoms. If inclined to moor, lay your anchors E.N.E. and W.S.W. half a mile off the village.

55.—BEVERIDGE'S REEF, *Latitude of East End*, 19° 59′ S.; *Longitude* 167° 42′ W.

This is a very dangerous reef, no part of it appearing above water, but the sea breaks over it in many places. On the inside of the reef there appears to be deep water. Its extent is about 10 miles north and south, and about 8 miles east and west. On the west side, near to the S.W. point, there appeared to be an opening.

TIDE-TABLE FOR AUGUST, 1833.

Mean Time.

Week D.	Month D.	PLYMOUTH *Dock Yard.*				PORTSMH. *Dock Yard.*				SHEERNESS *Dock Yard.*				LONDON *Bridge.*				ABERDEEN.				LEITH.				Month D.	D's Age at Noon
		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.			
		h.	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*		
Th.	1	5	55	6	12	....		0	1	1	1	1	18	2	34	2	53	1	29	1	45	3	4	3	20	1	15·2
F.	2	6	31	6	46	0	18	0	37	1	35	1	50	3	13	3	31	2	0	2	14	3	35	3	49	2	16·2
Sat.	3	7	1	7	17	0	54	1	11	2	6	2	22	3	48	4	6	2	30	2	45	4	5	4	20	3	17·2
S.	4	7	31	7	45	1	27	1	42	2	36	2	51	4	14	4	43	2	59	3	13	4	34	4	48	4	18·2
M.	5	7	59	8	14	1	58	2	14	3	7	3	24	4	59	5	18	3	28	3	44	5	3	5	19	5	19·2
Tu.	6	8	30	8	45	2	31	2	49	3	41	3	58	5	35	5	49	4	0	4	18	5	35	5	53	6	20·2
W.	7	9	2	9	20	3	7	3	26	4	14	4	34	6	5	6	23	4	38	4	59	6	13	6	24	7	21·2
Th.	8	9	40	10	2	3	46	4	9	4	53	5	15	6	40	6	58	5	23	5	50	6	58	7	25	8	LQ
F.	9	10	28	11	0	4	34	5	3	5	39	6	12	7	14	7	35	6	21	6	59	7	56	8	34	9	23·2
Sat.	10	11	43	....		5	38	6	17	6	44	7	25	8	2	8	34	7	39	8	22	9	14	9	57	10	24·2
S.	11	0	24	1	10	6	59	7	38	8	8	8	56	9	11	9	51	9	5	9	45	10	40	11	20	11	25·2
M.	12	1	55	2	33	8	18	8	55	9	39	10	19	10	33	11	11	10	21	10	53	11	56	....		12	26·2
Tu.	13	3	13	3	47	9	30	10	0	10	53	11	22	11	46	....		11	23	11	50	0	28	0	58	13	27·2
W.	14	4	17	4	44	10	28	10	53	11	48	....		0	18	0	51	....		0	17	1	25	1	52	14	28·2
Th.	15	5	9	5	35	11	18	11	42	0	15	0	41	1	20	1	55	0	41	1	5	2	16	2	40	15	N M
F.	16	5	59	6	23	....		0	6	1	6	1	27	2	25	2	50	1	28	1	51	3	3	3	26	16	0·9
Sat.	17	6	42	7	2	0	29	0	50	1	46	2	7	3	15	3	41	2	13	2	33	3	48	4	8	17	1·9
Su.	18	7	21	7	39	1	2	1	31	2	26	2	45	4	4	4	27	2	54	3	14	4	29	4	49	18	2·9
M.	19	7	56	8	14	1	51	2	11	3	4	3	24	4	50	5	10	3	35	3	56	5	10	5	31	19	3·9
Tu.	20	8	33	8	53	2	31	2	52	3	45	4	6	5	29	5	48	4	15	4	37	5	50	6	12	20	4·9
W.	21	9	13	9	36	3	16	3	38	4	26	4	49	6	7	6	26	4	58	5	21	6	33	6	56	21	5·9
Th.	22	9	59	10	27	4	3	4	31	5	12	5	38	6	43	7	1	5	47	6	19	7	22	7	54	22	FQ
F.	23	10	53	11	35	5	2	5	36	6	10	6	42	7	22	7	49	6	55	7	35	8	30	9	10	23	7·9
Sat.	24	....		0	26	6	15	7	0	7	27	8	10	8	29	9	4	8	21	9	2	9	56	10	37	24	8·9
Su.	25	1	2	1	42	7	34	8	7	8	43	9	23	9	52	10	35	9	42	10	17	11	17	11	52	25	9·9
M.	26	2	17	2	50	8	40	9	10	9	57	10	27	11	18	11	51	10	48	11	14	....		0	23	26	10·9
Tu.	27	3	21	3	47	9	37	10	0	10	53	11	16	....		0	24	11	38	11	59	0	49	1	13	27	11·9
W.	28	4	11	4	31	10	22	10	42	11	36	11	56	0	50	1	15	....		0	18	1	34	1	53	28	12·9
Th.	29	4	51	5	9	11	0	11	18	....		0	16	1	37	1	59	0	35	0	52	2	10	2	27	29	13·9
F.	30	5	29	5	46	11	35	11	53	0	35	0	53	2	19	2	39	1	7	1	23	2	42	2	58	30	Ful
Sat.	31	6	4	6	20	....		0	10	1	10	1	24	2	56	3	14	1	38	1	51	3	13	3	26	31	15·9

The times of high-water, nearly, at other places on the coast, may be found with the assistance of the above table within certain limits. Thus, the times in the Plymouth-Dock column are to be used for all places between the Land's End and Lyme Cob; and those in the Portsmouth column, for all places between Portland Bill and Beachy Head; by adding or subtracting the time opposite each place, according to the sign + or −.

The times of high-water at Plymouth Dock-Yard are to be used with the difference against the following places, to find the time of high-water there on the same day:—

	h. m.		*h. m.*
Mounts Bay and Lizard . . .	− 1 3	Eddystone	− 0 18
Falmouth Harbour	− 0 18	Dartmouth and Torbay . . .	+ 0 27
Fowey Harbour	− 0 18	Exmouth	+ 0 52
Cawsand Bay	− 0 10	Lyme Cob	+ 0 27

The times of high-water at Portsmouth Dock-Yard are to be used as above, for the following places:—

	h. m.		*h. m.*
Portland Bill	− 6 10	Cowes	− 0 55
Weymouth Harbour	− 5 10	Southampton	− 1 0
Christchurch and Poole Harbours	− 2 50	Bembridge Point	− 0 40
Needles Point	− 1 55	Selsea and Arundel Harbours	+ 0 5
Hurst Chamber	− 1 40	Shoreham Harbour	− 0 25
Lymington	− 1 25	Beachy Head	− 1 25

VOYAGES AND MARITIME PAPERS.

I.—THE LATE WILLIAM SYMINGTON.

THE discovery of the steam-engine constitutes, unquestionably, one of the most splendid triumphs of modern science; whether we consider the magnitude of the power itself, so far beyond any thing which, prior to this invention, had ever been contrived, or even conceived, of mechanical agency; the inventive talent by which the principle was originally brought to light; or the amazing ingenuity and skill which has given it practical effect in its infinitely diversified application to arts, manufactures, and the general business of life. It is impossible to contemplate, without a feeling of exultation, this wonder of modern art; this prodigiously powerful, yet singularly versatile agent, which sets in motion machinery of the most stupendous energy; which raises the most enormous masses of water from the lowest depths of our mines, and moulds into form, as if by magical facility, the hardest and most intractable materials, while it can be, at the same time, regulated and adapted to operations of the extremest nicety and minuteness. We see the same agency setting in motion the loom, and propelling the vessel on the ocean—the sea and the land thus teeming with the fruits of this marvellous invention, and bearing testimony to its usefulness and power.

Of all the uses to which the power of steam has ever been applied, that of locomotion is the most important; promoting, as it does, that facility of intercourse between the most distant points of a country, which, of all improvements, most essentially conduces to its prosperity; which, binding its different parts more firmly together, increases its strength, and gives it greater consistency and unity of action; and which, if this were the proper place to enlarge on such a subject, it would be easy to show, must even extend its beneficial influence to many of the great moral interests of an intelligent and highly-refined community. It is in this view that we consider the application of the steam-engine to this great object, as replete with such important consequences. It is now nearly twenty years since the agency of steam was applied to navigation, and every one is acquainted with the new and wonderful facilities which this discovery has opened up for the trade and intercourse of the country, and with the remarkable changes which it has actually effected, wherever any communication by sea, river, or canal, has permitted it to extend its influence. From the earliest times, mankind have been baffled by the uncertain elements of the winds and waves: by these a barrier was raised to the progress of navigation, which the boasted improvements of modern times were never able to overcome; and the proverbial uncertainty of a sea-voyage continued accordingly to be ranked among the irremediable evils of life. Hence it was, that when a voyage of a few miles might be protracted to several days, those great rivers and inlets of the sea which penetrate far into the land, instead of being of unrivalled utility to commerce, formed rather a drawback, in many cases, on our internal communications; while, with respect to rivers, no attempt could be made, with the least advantage, to navigate them against the stream. We possessed no power which could accomplish this object. The use of a river, as an instrument of internal intercourse, was, in consequence, much limited; and no craft were ever found to ply on any of the great streams, because they could only make their way in one direction. They were useless, except for this single purpose; and, in all countries, the water communications were, in a manner, mutilated and imperfect. As an example of the difficulties of internal navigation, it may be mentioned that, on the great river Mississippi, which flows at the rate of five or six miles an hour, it was the practice of a certain class of boatmen, who brought down the produce of the interior to New Orleans, to break up their boats, sell the timber, and afterwards return home slowly by land; and a voyage up the river from New Orleans to Pittsburgh, a distance of about two thousand miles, could hardly be accomplished, with the most laborious efforts, within a period of four months. But the uncertain and limited influence, both of the wind and tide, is now superseded by a new agent, which, in power far surpassing the raging torrent, is yet perfectly manageable, and acts with equal efficacy in any direction. The practical effects of this great discovery have been truly astonishing. Coasting voyages, which were formerly tedious and uncertain, can now be performed with all the expedition of land journeys. The most rapid rivers, on which only a solitary boat was here and there placed for the convenience of crossing, have now become the active scenes of intercourse and trade; they are covered with large vessels, crowded with passengers on pleasure or on business, which, by the powerful aid of steam, resist the current, and force their way with ease through the opposing waters. Steam-boats of every description, and on the most improved models, ply on all the great rivers of the United States; the voyage from New Orleans to Pittsburgh, which formerly occupied four months, is accomplished with ease in fifteen or twenty days, and at the rate of not less than five miles an hour. Steam-boats have begun to ply on the Ganges, and in other parts of the East. On the rivers, lakes, inlets, as well as the narrow seas of Europe, they are everywhere to be seen; and in the interior navigation of our own country, they have already superseded the use of all other vessels. The intercourse of Great Britain with Ireland, as well as with France, where the two countries are contiguous, is also chiefly carried on by these conveyances: on the western shores of Scotland, which are intersected through their whole extent by a series of deep inlets, or lochs, as they are termed, the advantages of steam navigation have been wonderfully exemplified, and a complete change has, in consequence, been effected in the aspect of the country, and in the habits and intercourse of the people.

The foregoing picture of the effects attending the application of steam to navigation is copied from a late number of the Quarterly Review; and if we were asked who first shewed the manner in which that agent might be so applied, we would say, A certain Jonathan Hulls in the year 1737, although he was so far " unsuccessful," as that he met with no encouragement in his invention: but if we were told to select the person who in our own times re-discovered, as it were, the application of this powerful auxiliary to navigation—who employed a life-time and a fortune in bringing it to perfection—who saw his invention plundered by others, and was deprived of that reward which assuredly was due to him;—All this, we would say, was verified by the late unfortunate William Symington. That Symington had never seen Hulls' sixpenny pamphlet now before us, in which he describes his machine (assuredly the steam-engine) for towing vessels, and in which is a copy of the patent granted to him for it, we have no doubt; and although the honour of having been the first discoverer cannot be awarded to him, the credit of his invention remains untouched. The ingenuity by which he effected his object, and the perseverance with which he pursued it through every difficulty, must equally claim our admiration, while his misfortunes through life entitle his family to the sympathy and protection of his countrymen. The life of such a man as Symington must afford ample material for the foundation of an interesting volume of biography; and we hope to see Mr. Bowie's pamphlet respecting him hereafter assume that form, but regarding his late friend under another title than that of the *first* who applied steam to navigation.

In the mean time, steam navigation is daily becoming more important; and we shall avail ourselves of Mr. Bowie's little work, to convey to our readers some account of the labours of Symington in this field of science.

WILLIAM SYMINGTON, the father of modern steam navigation, was a native of Leadhills, county of Lanark, Scotland. While receiving an education to qualify him for the church, an early predilection for mechanical philosophy led him to abandon his theological studies, and pursue with ardour those connected with his favourite science. His genius soon attracted the notice and secured the patronage of Gilbert Meason, Esq., then connected with the Wanlock Head lead-mines. Before completing his twenty-first year, Mr. Symington had made several improvements on the steam-engine; and, having protected them by His Majesty's Royal Letters Patent, constructed and introduced engines on his principle into different parts of England and Scotland.

As early as the year 1784, amidst the wild bleak scenery of the country he inhabited, and when he knew nothing of any attempts which might have been made to realize such an idea, it occurred to him that steam might be rendered available for the propulsion of locomotive carriages. He immediately set about embodying his idea; and, in 1786, submitted to the inspection of the professors and other scientific gentlemen in Edinburgh, a working model of a steam carriage, (Fig. 1,) which afforded such proofs of capability, that he was warmly urged by all present to carry his invention into full effect.

But with a sense of honour which redounds to his credit, he would not allow his friendly advisers, or his patron, Mr. Meason, to embark in an undertaking to which the state of the roads in Scotland, and the difficulty of procuring fuel and water, presented in his opinion insurmountable objections. Besides, he was the more easily induced to abandon his experiments on land-carriage, by a belief in the possibility of more advantageously employing steam for the purposes of navigation.

While the model was in Edinburgh, Patrick Miller, Esq., of Dalswinton, who had heard of it from Mr. James Taylor, tutor in his family, who had been a schoolfellow of Mr. Symington, called at Mr. Meason's, and having minutely inspected it, expressed himself highly pleased with its construction and performance. In the course of conversation, Mr. Miller mentioned that he had spent much time in making experiments, for the propelling of vessels upon water by wheels in place of sails or oars; and that they had been put in motion by applying manual strength to turning a handle or winch. He also said he had attempted to work them by the power of horses, as he had heard something of the same kind had been accomplished, even by means of oxen, in America. It occurred to Mr. Symington, and he stated his opinion to Mr. Miller, that a steam-engine might be constructed which would propel a vessel, by communicating a rotatory motion to the paddles by the alternate action of two ratchet wheels, in the same manner as in the model of the steam-carriage, then before them. Mr. Miller said he considered such a thing impracticable; and inquired how it could be possible to work such an engine on board, without setting the vessel on fire?

The description given of the model, and the manner in which it was intended to apply the power of steam, seemed to convince Mr. Miller of the practicability of the project; and he observed, that if Mr. Symington thought he could construct a steam-engine, and work it with safety on board of a vessel, an experiment should be made, on a small scale, as soon as he (Mr. Symington) could possibly attend to it: and it was explicitly understood that the plan and construction of the engine, the mode of producing rotatory motion, and the means to be adopted for guarding against danger, were to be left entirely to Mr. Symington.

Soon after this conversation, by Mr. Miller's desire he proceeded to construct a small engine, on a similar principle to one for which he had previously procured a patent. It was executed under his immediate inspection, and fitted on board a small double-keeled vessel, lying upon a lake, near the House of Dalswinton.—(*Vide* Fig. 2.) With this vessel a trial was made of the powers of the invention, in the autumn of 1788, in presence of Mr. Miller, and various persons of respectability; when the boat was propelled in so satisfactory a manner, that it was immediately determined to commence another experiment, upon a more extended scale.

In the month of October, 1789, a second exemplification* (*v.* Fig. 2,) was afforded on the Forth and Clyde inland navigation, in presence of hundreds of spectators, who lined the banks of the canal to witness what seemed so extraordinary an attempt; and who testified by acclamation their satisfaction at its result. Mr. Miller; Messrs. John Adam, of Blairadam; John Balfour, of Pilrig; Ambrose Tibbetts, members of the Carron Company; James Taylor; and David Drysdale, an experienced seaman, who took charge of the helm—were on board. The boat glided along, propelled at the rate of nearly six miles an hour; and all parties interested declared their conviction of the success of the experiment.

In this instance, the machinery was constructed at the Carron Works, also, under the sole direction of Mr. Symington, and erected in a boat which had been used in Mr. Miller's previous experiments.

Having thus established the correctness of his views, Mr. Symington had the misfortune to lose the patronage of Mr. Miller, who suddenly withdrew himself from public business, and devoted his time to improving Dalswinton estate. Under these circumstances, Mr. Symington's pecuniary resources being insufficient to enable him, unaided, to go farther in endeavouring to introduce steam navigation, he was compelled to desist, and turn his attention to the fulfilment of engagements with the Wanlock Head Company, for constructing machinery on a large scale, to enable them more extensively to carry on their operations.

After an interval of ten years, the late Thomas Lord Dundas, of Kerse, applied to Mr. Symington, and, having alluded to his former experiments, expressed a wish that he would employ himself in constructing a vessel capable of being propelled by the power of steam, and superseding the use of horses in dragging vessels upon the Forth and Clyde canal; of which canal his lordship was an extensive proprietor. Accordingly, under the auspices of that intelligent nobleman, a series of experiments was commenced in January, 1801, and continued until April, 1803. The cost of these experiments somewhat exceeded £7,000; but they placed beyond the possibility of doubt, the practicability of steam navigation.

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* These exemplifications exactly resembled each other, in every thing but magnitude.

In March, 1802, Mr. Symington took on board the Charlotte Dundas,* (Fig. 3,) at lock No. 20 of the canal, Lord Dundas, the Honourable Captain George Dundas, R.N.,† Archibald Spiers, Esq. of Elderslee, and several gentlemen of their acquaintance;—and with two laden vessels,‡ each of seventy tons burden, attached to the steam-boat, performed with great ease the voyage to Port Dundas, Glasgow; a distance of nineteen miles and a half,—although it blew so strong a gale right ahead, during the whole course of the day, that no other vessel in the canal attempted to move to windward.

Having afforded so complete a verification of what he had ventured to predict he would accomplish, a proposal was made to the proprietors of the canal to substitute steam-boats as tugs in lieu of horses; but it was rejected, on the allegation that the undulation created in the water, by means of the paddle wheels, would have the effect of washing down the banks, and thereby do greater injury than any benefit likely to be conferred by the invention could counterbalance:§ and although, on this point, Lord Dundas and Mr. Symington were of a different opinion, they felt themselves compelled to abandon almost all hope of carrying in that place the invention farther into effect, against a host of opponents, steeped in prejudice, and filled with preconceived opinions.‖

Lord Dundas was, however, so convinced of the efficiency of Mr. Symington's exemplification, that he requested a complete model of the steam-engine and boat (with a set of ice-breakers attached) should be made. This was done, and Mr. Symington proceeded to London, and presented it to his lordship at his residence in Arlington-street. Lord Dundas, after examining it, suggested the propriety of its being submitted to the inspection of his Grace the Duke of Bridgewater, whom his lordship knew to be an enterprising and enlightened nobleman; who, if he approved of the invention, could adopt it upon the extensive canals of which he was the sole proprietor.

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* Named in honour of his lordship's daughter, the late and lamented Lady Milton.

† It may yet be in the recollection of the Honourable Captain Dundas, the difficulty which existed, owing to the improper manner in which the towing lines were made fast, of making the vessels obey their helms; and that by his simple but ingenious device, the difficulty was speedily and completely overcome.

‡ The Active and Euphemia; Gow and Esplin, masters.

§ An opinion afterwards declared to be a fallacy by an engineer; described in a report of the canal managers, as one of the most skilful of the present day.

‖ An accusation allowed to be just in the report alluded to; and warranted by what may be seen in Elijah Galloway's account of Mr. Symington's experiment.

His lordship accordingly called upon the Duke, and having mentioned that Mr. Symington was in town, requested he might be permitted to wait upon his grace, for the purpose of exhibiting the miniature exemplification of his invention, and explaining its powers. In reply to this request, his grace observed, that it appeared to him altogether needless to amuse themselves farther with any thing regarding steam-boats, as he could well assure his lordship they would never be made to answer any useful purpose; having himself, subsequently to the experiments which Mr. Symington had made in Scotland, bestowed upon the subject much pains and great expense, without having attained the least hope of success: yet, with this impression as to the improbability of its utility, he was still willing to see any thing new, and consented to examine the model.

When Mr. Symington called next day, after exhibiting his boat and explaining its construction and capability, his grace's sentiments underwent so complete a change, that he declared such a vessel as the one before him had every appearance of answering the purpose he wished; and pointing to his collection of paintings, which he said had cost him upwards of £100,000, stated his belief that the advantage which trade might, at some future period, derive from the use of such steam-boats, would many times exceed the value of his excellent gallery of pictures. To show his conviction of the truth of this prediction, he gave Mr. Symington an immediate order to build eight boats of a similar construction, for the use of his canal; and pressingly requested him to devote his whole time to its execution, with the least possible delay.

Mr. Symington returned to Scotland, elated with the prospect of being able, in a short time, successfully to introduce steam navigation, and to realize to himself and family advantages which his ingenuity and unwearied perseverance gave him so just a title to anticipate: but, as if doomed to disappointment, the day which saw him satisfactorily complete his last experiment, witnessed the downfal of his expectations. For on that very day he was informed by Lord Dundas, of the committee's final determination not to allow steam-boats to be employed on the canal; and also of the death of the Duke of Bridgewater.

Unable longer to struggle against such a multitude of misfortunes, Mr. Symington, his own resources being exhausted, was obliged, with great reluctance, to lay up his boat in a creek of the canal, near to Bainsford drawbridge, where it remained for many years exposed to the view of the public.

During the time the boat lay at Bainsford, Henry Bell, of Glasgow, was frequently beheld inspecting it; and, in 1811, he in conjunction with others, constructed the Comet steam-boat, which in that year first plied upon the Clyde.

With regard to Bell, it can be indisputably proved that he had numerous opportunities of witnessing the whole of Mr. Symington's exemplifications, from their commencement to their termination; and that he was at the Carron Works, where he was often seen inspecting the machinery, even while it was being manufactured. Indeed, to such an extent did he carry his curiosity, that the workmen used to complain to Mr. Symington of being unable to keep him out of the place where they were making the patterns. Reference to the books of the Carron Company will prove the circumstance of his having been present.

Much praise has been awarded to Bell for the introduction of steam navigation; but how far he deserves it, the following facts will elucidate: Notwithstanding the many opportunities he had enjoyed,—notwithstanding his having voyaged to America, to instruct, or to be instructed by, the celebrated Fulton,—the Comet was far inferior in her performance, even to Mr. Symington's second exemplification. When the Comet commenced her operations as a passage boat upon the Clyde, she possessed four insignificant paddle-wheels, and took nine hours to sail from Port Glasgow to Glasgow.

The Elizabeth steam-boat was the next constructed. Bell hinted his intention to prevent her being built; but his pretensions were too well known to induce the followers of his piracy to pay any attention to his threats; and he soon had the mortification to see numerous and far more elegant vessels deprive him of the advantage at which his lawless cupidity had tempted him to grasp.

When it is known that Mr. Symington mentions in his specification that the wheels may be placed in the centre, or at the sides of the vessel, according as circumstances may require, where, in reference to such construction and adaptation, is the superior skill and talent, of an honest kind, displayed by Bell, as an inventor?

The American engineer, Robert Fulton, another competitor for the merit of having invented and introduced steam navigation, can be proved to be as little entitled to it as Bell; he having also pirated Mr. Symington's invention; as can be established by the following incontrovertible statement:—

It happened one day, during the month of July, 1801, while Mr. Symington was conducting his experiments under the patronage of Lord Dundas, a stranger came to the banks of the canal, and requested an interview: he announced himself as Mr. Fulton, a native of North America, to which country he intended to return in a few weeks; but having heard of the steam-boat experiments, he could not think of leaving Scotland without waiting upon Mr. Symington, in the hope of seeing the boat and machinery; and procuring some information as to the principles upon which it was moved: he remarked that, however beneficial the invention might be to Great Britain, it would certainly be of more importance to North America, considering her many navigable rivers and lakes; and the ease with which timber could be procured for building such vessels and supplying them with fuel. He thought fit farther to say, that the usefulness of steam vessels in a mercantile point of view could not fail to attract the attention of every observer; and that if he was allowed to carry the plan to North America, it could not but turn out to Mr. Symington's advantage, as, if inclined for it, or his other engagements would permit, the constructing, or at least the superintending the constructing, of such vessels, would naturally devolve upon him. Mr. Symington, in compliance with the stranger's earnest request, caused the engine fire to be lighted up, and the machinery put in motion: several persons entered the boat, and, along with Mr. Fulton, were carried from lock No. 16, where she then lay, about four miles west; and returned to the place from whence they had started, in one hour and twenty minutes, to the astonishment of Mr. Fulton and the other gentlemen present.

Mr. Fulton asked and obtained leave to take notes and sketches of the form, size, and construction of the boat, and apparatus: after fully satisfying his curiosity, he took his leave; but he never afterwards had the honour or the gratitude to acknowledge his obligation to Mr. Symington.

It may here, with propriety, be noticed, that Captain Basil Hall lately suggested the steering of vessels at the stem, instead of the stern: a mode adopted in America. Reference to Mr. Symington's boat will show from whence the Americans obtained the idea.—(*vide* fig. 3.)

Broken down in spirit, and reduced to much and severe distress, Mr. Symington was unable longer to contend against such a train of disappointments; and his plunderers have since been left in the unmerited possession of the fruits of his anxious, arduous, and expensive labours.

When a committee of the honourable House of Commons was appointed to inquire into the nature of the engines employed on board of steam-boats, James Walker, Esq. kindly interested himself, and sent notice to Mr. Symington, then in Scotland, that he thought it would be proper to get a memorial drawn up and laid before the committee: unfortunately, before this could be accomplished, Mr. Symington was informed that the investigation had terminated.

About eight years ago, Mr. Symington was induced to present a memorial to the Lords of his Majesty's Treasury, in consequence of which £100 were graciously awarded from his Majesty's privy purse; and a year or two afterwards, a further sum of £50. He was in hopes an annual allowance might have been procured, but he was disappointed; and all he ever received for the trouble he had taken to collect documents, furnish drawings, and defray his expenses, were the sums already noticed. His drawings, affidavits, &c. when left at the Treasury, he was told would be returned when required; but when applied for, it was stated they could not be procured.

When it is borne in mind that Mr. Symington not only benefited his country by his inventive powers, but also paid into the national coffers a sum, exceeding what he ever received, for the purpose of purchasing protection for his rights:—protection which was a mockery; when it is made known that Mr. Bell obtained £200 from Mr. Canning; and that when, by the advice of intelligent and respectable friends, Mr. Symington attempted to bring his claims before parliament, by means of petition, Mr. Goulburn, then Chancellor of the Exchequer, refused to allow its being presented, alleging the subject had previously been frequently before him; surely it cannot be said Mr. Symington was too liberally treated. He always believed Mr. Goulburn, in making this assertion, was mistaken,* as when the £150 were awarded, Lord Goderich and Mr. Canning were Chancellors of the Exchequer.

After this disappointment, Mr. Symington gave up all hope of having justice done to him, and soon after became so much an invalid as to render him unable to quit his bed-room. Before any measures could be adopted to convince Mr. Goulburn of the justice of his claims, political changes of so unexpected and extraordinary a nature occurred, as to render it unnecessary to remove the seemingly erroneous impressions of that gentleman respecting them, and impolitic to appeal to the public judgment at a time of so much excitement.

It has been mentioned that Mr. Symington's health had long been in a declining state; and it was evident for weeks, not only to those around him, but even to himself, that his end was fast approaching. As it drew nigh, he exhibited the utmost fortitude and resignation; and even on the last day of his existence, he afforded an instance of magnanimity, and goodness of heart, deserving of record. His son-in-law, with whom he resided, was at that time, with three of the family, labouring under a dangerous and malignant fever, and it was dreaded the disease might affect the other inmates of the dwelling. Less mindful of himself than of those who were dear to him, Mr. Symington endeavoured to encourage his daughter to bear up against her

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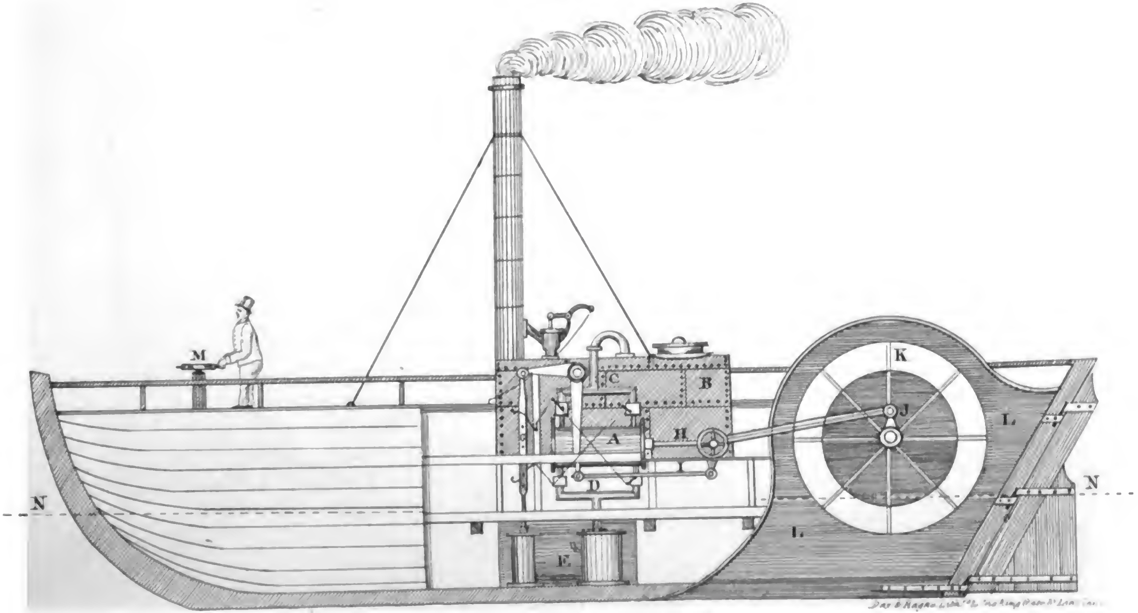
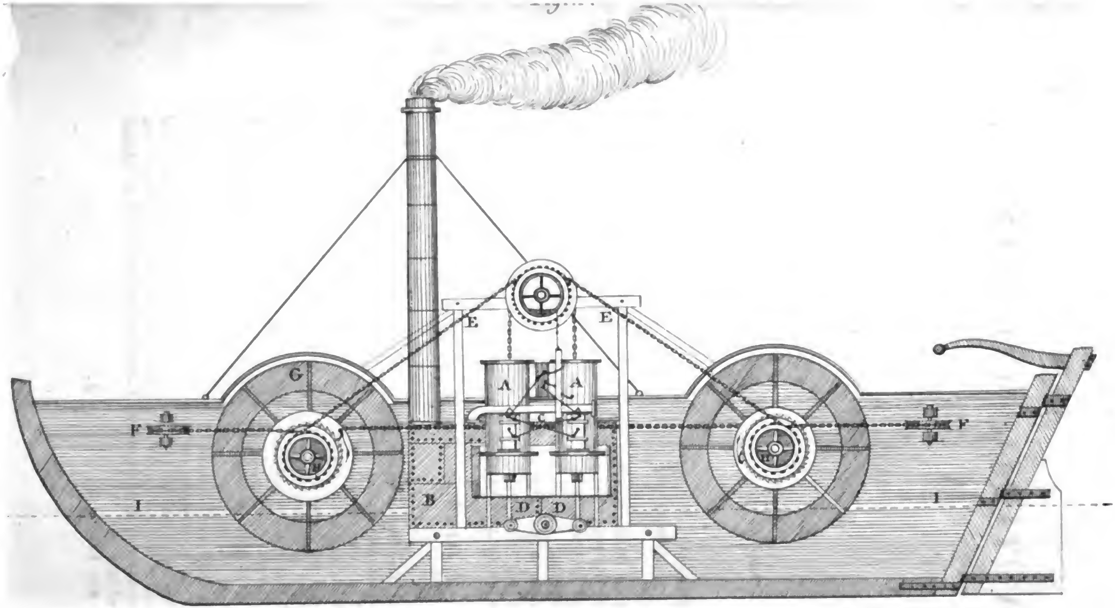
* Mr. Symington used to say, "It must be a mistake, had Lord Goderich or Mr. Canning thought my claims unjust, they never would have interested themselves on my behalf."

Fig. 3.



PARTIAL SECTION OF THE CHARLOTTE DUNDAS

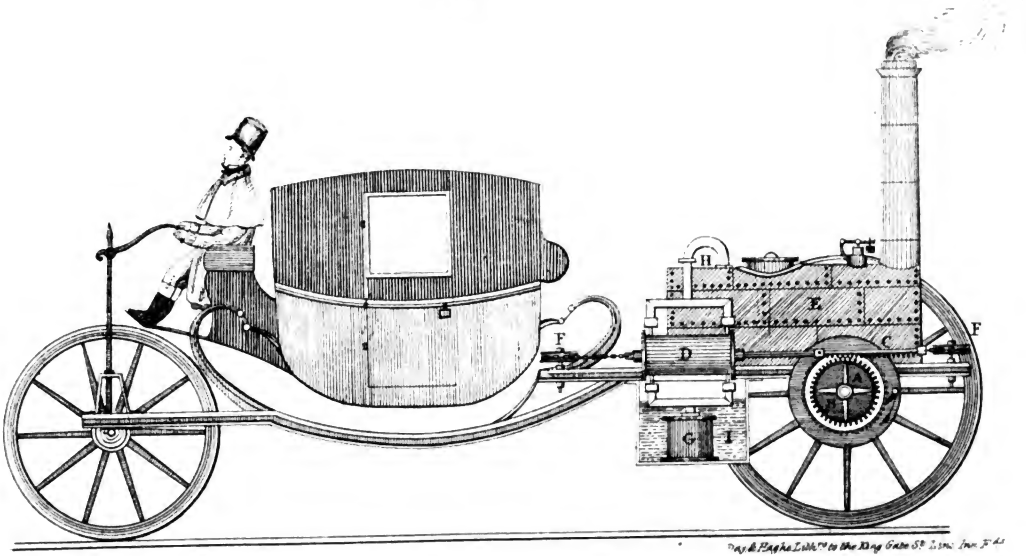


Day & Haghe Lithrs to the King Gate St

LATERAL SECTION OF THE ORIGINAL STEAM BOAT.

Pubd for the Proprietors of the Nautical Magazine, by Simpkin & Marshall 1st August 1833

Fig. 1.



Day & Haghe Lith.rs to the King Gate St. Linc. Inn F.ds

LATERAL SECTION OF STEAM CARRIAGE MODEL.

Published for the proprietors of the Nautical Magazine by Simpkin & Marshall, 1st August, 1833.

calamities, and to look forward with hope to the termination of the malady which was placing the lives of so many of the domestic circle in jeopardy. To his wife and son, who were likewise standing by his bed-side, he also attempted to offer consolation. Invoking blessings on all around him, he besought them not to grieve on his account; for that whatever he might formerly have done to benefit others, he was now a useless sufferer, and wished to be at rest. Requesting his infant grand-daughter, to whom he was much attached, might be brought to him, his wish was complied with; and taking the child in his arms, he blessed her, and prayed she might be a blessing to her parents, whom he trusted might yet both be long spared to protect her. A few hours afterwards, and on the 22d of March, 1831, he expired, in what might truly have been termed the house of sorrow and severe affliction.

Thus died* an ingenious and ingenuous man; one who, possessed of the highest talents, possessed not that knowledge of the world to enable him to guard against duplicity: and who, when he found he had been taken advantage of, had too independent and indignant a spirit to trumpet forth his distresses, or proclaim his wrongs.

It is a pleasing reflection that, although deserted by his country, he was never destitute of a home. Ill in body, and depressed in mind, he came to London, in the hope of experiencing relief. Finding his health to improve, he resumed his mechanical pursuits: and, until his disappointment by Mr. Goulburn, seemed likely to have been spared, even for years.

His mortal remains rest in the church yard of St. Botolph, Aldgate without: so that he owes not even a grave to the land of his nativity.

Description of Drawings.

FIG. 1.

A.—Drum, fixed upon the hind axle.
B.—Tooth and ratchet wheels.
C.—Rack rods, one on each side of the drum; the alternate action of which, upon the tooth and ratchet wheels, produce the rotatory motion.
D.—Cylinder. E.—Boiler, supplied from the condenser.
F F.—Direction pulleys. G.—Condenser. H.—Steam pipe.
I.—Water tank.

FIG. 2.

A A.—Cylinders. B.—Boiler. C.—Steam pipe. D D.—Air pump rods.
E E.—Connecting chains. F F.—Direction pulleys.

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* The ruling passion was strongly exhibited by Mr. Symington a few hours prior to and even at the moment of his death.

The irregular form of his bed-room occasioned him so much uneasiness, that, when he became slightly delirious, he requested his son to reduce it to a proper square. And his last act was an imitation of winding up and adjusting a newly invented chronometer, which he had nearly completed.

G G.—Paddle wheels, situated and wrought in a trough, extending from stem to stern of the boat, and allowing free ingress and egress to the water.
H H.—Ratchet wheels, for communicating motion to the paddles. I I.—Flotation line.

Fig. 3.

A.—Cylinder. B.—Boiler. C.—Steam pipe. D.—Eduction pipe. E.—Condenser, and air pump. G.—Hand gear and pump rod. H.—Piston and connecting rod, supported by the friction wheels. I.—Rod which communicates motion to the air pump lever. J.—Crank. K.—Paddle wheel, situated in a cavity in the centre of the stern of the vessel. L L.—Paddle wheel cavity, open behind and below to the water. M.—Steer wheel. N N.—Flotation line.

The boat was steered by two rudders, connected by irons rods, and worked in the prow by the steer wheel.

II.—ROUTE OF THE ARETHUSA, *Captain J. S. Boulton, from Van Diemen's Land, homeward, by way of Cape Horn,* 1832-33.

ON the 13th of December, 1832, we left Hobart Town in the Arethusa, and experienced generally fine weather until we made *Penantipodé*, or *Antipodé Island*, on the 25th. Here we saw immense flocks of penguins, which saluted us with their loud noise. Proceeding onward, on the 4th of January, 1833, we fell in with the first ice, in latitude 54° 48′ S. and longitude 148° 57′ W. At the same time we saw seals, sea-elephants, and innumerable flocks of the snow petrel, and the sea appeared much discoloured with rock-weed; therefore it is probable that some small island exists near this spot. We continued on our course, seeing more or less of the ice, until the morning of the 10th, when ice was seen from the masthead, both ahead and on each bow. We, however, fearlessly pushed on, as it was useless to turn back, and we had plenty of day-light. About 10 A.M. we discovered an opening in this congregated and truly dangerous mass, and, reducing sail, so as to have the vessel more under command, with all hands looking out, myself and three others at the masthead, to guard against sunken dangers, we pushed through it boldly. A volume might be written on the awful beauties of this scene; and I am firmly of opinion, that such an enormous quantity of ice as that we were amongst, must remain stationary for a considerable time. It is true that I expected to meet with ice in great masses, or detached pieces, (and so would every one coming this way,) but I was totally unprepared to witness what we saw. Towards noon we could observe this immense body of ice to extend, in one level chain, for at least twenty miles east and west, with hundreds of smaller ones, from the size of a boat to three miles in circumference. Some of these masses I had the curiosity to measure, and found the height of one 840 feet above the level of the sea; and, as I have seen some of them from the deck at the distance of 29 miles, by log, I am led to believe that they may be higher.

Towards midnight we had escaped from our critical and dangerous situation, and could count only fourteen islands before us. We thus continued running among more or less ice, until the 20th of January, when we again fell in with an almost impassable barrier; this was in latitude 56° 59′ S. and longitude 93° 46′ W.* Barometer 29·7: thermometer 51°.

20th January, at noon, ice was reported from the masthead, extending from both beams ahead as far as the eye could reach. The weather at this time was moderate, and we had no other alternative but to proceed on our course as nearly as circumstances would permit At about two P. M. we entered this barrier, when it came on thick hazy weather, with constant small rain. Our situation now became more alarming and dangerous; the little distance we could see showed nothing but stupendous masses of solid ice, in all possible shapes, and the greatest distance between them about one quarter of a mile; and so closely were they huddled together, that, until nearly approached, no opening could be observed between them. At the same time, in passing many of the enormous masses, the noise they made in cracking, from the effects of the thaw, was awfully grand and sublime; in many instances it was similar to the sudden burst of thunder, or the broadside of a line-of-battle ship.

My sensations during the day, and at this moment, *midnight*, may be imagined; as we threaded our way among them, concealed as they were by fog, we were in frequent danger of striking on them, every man of the watch on the look-out, for our lives depended on their vigilance; and I must say, in justice to them all, that they have invariably done their duty on this essential point.

The large islands are not the most dangerous, but, on the contrary, the small detached pieces level with the water's edge; for, when the wind is high, it is almost impossible to distinguish them from the break of the sea; and yet these small pieces do as much injury to a vessel as the large ones, by knocking a hole in her bottom. Some fragments taken up in a bucket produced water very good and pure.

Thick hazy weather now ensued; and at about one, A.M. it came on so thick a fog, that it was quite impossible to see twice the length of the vessel; we had previously brought the ship under her topsails and courses, and fortunately did not meet with ice of any consequence. At four A. M. the weather cleared up, and we found ourselves completely surrounded by ice. Shortly after, it again thickened, and we continued our course in a dense fog, trusting to Providence and a good look-out.

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* This, it may be observed, was more than five degrees to the northward of the tract in which Captain Biscoe saw many icebergs, and afterward many small birds, in February, 1832. J. P.

On the 21st of December, at 10 A.M. the sun peeped out for a minute; that minute was sufficient to give us a glimpse of our dangerous situation, and a sight of his lower limb. From this momentary glance we could count thirty ice islands, scattered in all directions, although we could not see two miles any one way.

It occasioned some surprise among us that we did not see any of the snow petrel, as they are frequent in these parallels, and said generally to be in the vicinity of ice. I must here remark, that dependence should not alone be placed on what is said to foretell the near approach of icebergs; viz. a white or luminous reflection in the atmosphere hovering over them. This may sometimes occur; but from strict observation I have ascertained, that it can be discovered only over those which are large and square-topped, besides being invariably covered with snow. The rugged icebergs, and those that have upset, never shew themselves in that manner, as far as my observation enables me to decide. The safest, and, in my opinion, the best way to discover them, is by keeping a good look-out; the eye constantly tracing and retracing the dark line of the horizon, for ice will always make that part of the horizon where it it is, appear lighter. By adopting this method, we were never mistaken; whereas, if we had been looking aloft, we should have run on many; at the same time, one individual should be more particularly appointed to look out for the small pieces.

We had not yet escaped from the difficulties by which we were surrounded. At about ten minutes before twelve, the fog became so dense, that we could not see a cable's length from the vessel. A few minutes previous, we had observed innumerable masses of ice around us, and we had more than ever occasion for alarm. At noon, we passed so close to two of these stupendous bergs, that the spray of the sea, which broke furiously over them, nearly fell aboard of us. This was a fearful moment; and had a stranger witnessed the workings of each weather-beaten visage of the crew, as we dashed by the huge precipice of ice, he would have had sufficient cause for alarm, when he reflected that such men are familiar with danger in every form, and are given to be careless of it. The critical moment passed in awful silence, save the roar of the wind and the dashing of the waves: our preservation was next to a miracle, and none who traverse the boundless ocean will have more cause to bow in humble adoration and gratitude to the Amighty Disposer of events than ourselves. Truly it is, "they that go down to the sea in ships, that do business in great waters; these see the works of the Lord, and his wonders in the deep."

The weather still continued thick and hazy, with small rain; occasionally we saw several icebergs and many small pieces, which, I observe, generally extend about half a mile or more to leeward of the larger ones; and, as I have said before, require the utmost caution in guarding against. At 10 P. M., as it was getting dark, and thick weather coming on, we brought the vessel under reefed topsails and courses; passed many islands within one quarter of a mile.

It may, perhaps, appear strange that I should proceed, in this critical situation, at the rate of seven and eight miles an hour: but I found it the safest mode; for, by going fast through the water, the vessel was more immediately under command, and the course might be altered four or six points each way; but if under easy sail, she would be more sluggish in her movements; and if hove-to, had one of the islands been seen to leeward, under circumstances, she might have been driven on it before we could get her round.

On the 22d we had fresh gales, which brought us under our close-reefed topsails; and towards midnight, the sea rose to a tremendous height, and was one complete sheet of foam. The vessel laboured much, and took in water fore and aft. Happily the interval of darkness in the night lasted only from ten until two in the morning, and during this time it was my first care never to leave the deck; but if the weather be fine, real night is scarcely known here at this time of the year. At midnight, the weather still continued foggy, with small rain; but sufficiently clear for us to see another ice island, as we passed it. At 35 minutes past four A.M. we saw one of the largest islands upset. The sight was truly grand: the sea was broken by the concussion of this huge mass, which was fully 800 feet high, producing a noise as loud as thunder; all around it was foam and agitation; and, when the mist occasioned by its fall cleared away, we beheld the enormous body rising out of the watery element in a totally different shape; its original appearance having been very high and square, but now it was full twice its former length, besides being low and smooth. This was the third ice island we had seen upset; and fortunately so for us, as it makes us more careful, and warns us not to approach too near them. The cause of this phenomenon is obvious; as the upper part accumulates with snow and the spray of the sea, the lower part decays or washes off, and it overturns to recover its natural position.

On the 23d we had a thick fog, with constant small rain the whole twenty-four hours. We passed many ice islands; but, by a good look-out, we kept clear of accident.

On the morning of the 24th, in latitude 56° 51′, and longitude 78° 6′, we passed the last ice island, after having had little rest or comfort for twenty days. At 11h. 58m. A. M. of the 26th, we made the islands of Diego Ramirez, when we found the chronometers, which had been tried at Hobart-Town, quite correct. At 14 minutes after twelve, the land was distinctly visible from the deck. We had a glorious breeze, and I took several observations, in order to be certain of our situation. Off Cape Horn we passed a large frigate; and on the 27th made and passed *Staten Island*, at the distance of 24 miles. Here we saw great quantities of the albatross, penguins, with other aquatic birds, and a few seals.

The prevailing opinion that the weather off the southern promontory of America is always rough and tempestuous, is certainly ill-founded. This is the third time that I have rounded it with the finest weather imaginable; and once, in the depth of winter, I was becalmed three days in sight of this Cape, the darkness alone rendering it unpleasant: of all parts of the world subject to storms, that between the Azores and the coast of Britain[*] is the worst.

On the 1st of February, we experienced a thunder-storm, and had much rain. On the 5th, we caught a fine porpoise; this was the third. They make excellent food; and, to my taste, they are nearly as good as home-cooked beaf-steaks. On the 6th, we had another severe thunder-storm, and observed many of the *Will-o'-wisp* lights at our mastheads and yard-arms. This day we had strong gales, with a heavy cross sea; on the following day the gale continued; the sea rose with the wind, and in the evening we shipped a sea, which stove in the window, and nearly washed me and another person out of our beds.

On the 9th of February, we lost our good strong breezes, and met with nothing but light contrary winds and calms. Twenty-three days were successively passed in anxiety and suspense; added to which, in the midst of these adverse winds, it was found that the water on board had become so corrupt as to be unfit for use, owing to the neglect of the cooper at Hobart-Town, who had sent spirit casks not properly seasoned, notwithstanding all my cautions to prevent him from doing so. Under these circumstances, on the 7th of March, finding the light winds continue, and the water getting worse daily, owing to the heat of the weather, I was compelled, much against my inclination, to put back for Bahia. On Saturday, the 16th of March, by our time, (Friday, the 15, by that of the country,) we anchored in Bahia Roads; and after *quarantine* till the evening, found the charges for anchorage, and schemes for detention in order to augment those charges, truly disgraceful. In short, *the expense of gaining twelve casks of water was £20 sterling*.

Brig ARETHUSA, *from Van Diemen's Land to Cape Horn,* 1832-33.

1832, December 13, left the River Derwent.

Dec. 14,	44°	3′S.	149°	10′E.	Weather inclined to calm.
15,	45	1	152	11	Strong breezes, heavy sea.
16,	45	1	154	15	Wind S.S.W.; steady breezes.
17,	47	1	No obser.		—— S.W. and W.; squally.
18,	47	26	158	16	—— W.S.W.; squally, with showers.
19,	48	16	161	39¼	—— S.S.W.: breezes; passing showers.

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[*] See Major Rennell's Current Charts, Plate I. J. P.

Dec. 20,	48° 42'S.	164°	16½'E.	——	S.W. and N.W.; moderate and clear.
21,	49 15	168	2	——	S.S.E. and S.E.; moderate and clear.
22,				——	South; rock-weed in large flakes.
23,	50 5	172	54	——	W. N. W.; sea-weed and many birds. Bar. 30.1. ther. 54°.
24,	50 16	176	32	——	Variable; westerly; moderate and cloudy.
25,	49 50	179	32	——	Variable. Bar. 29.7, ther. 53°.
26,	50 5	177	58	——	Calm; S.byE. Bar. 29.6. ther. 53°.
27,				——	Southerly; moderate and cloudy.
28,				——	Variable, and S.S.W. Bar. 30.0. ther. 53°.
29,				——	North-westerly. Bar. 30.1. ther. 53°.
30,	52 11			——	Variable, and S.S.W.; rock-weed. Bar. 30. ther. 54°.
31,	52 6			——	Variable, and westerly. Bar. 29.5, ther. 53°.
1833.					
Jan. 1,	53 4			——	Westerly; fine serene weather. Bar. 29.5. ther. 53°.
2,	54 6			——	West.: a whirlwind; many snow petrels.
3,	54 33			——	W.S.W.; birds, ice islands, and seals.
4,	54 48	148	57W.	——	W.S.W.; rock-weed, icelands on both sides.
5,	55 0	143	51W.	——	S.W.; snow and hail; whirlwind. Ice on both sides, from 300 to 800 feet high.
6,	55 38	137	48W.	——	West; snow and hail; ice islands.
7,	56 2	133	27½	——	S.W.: no ice seen.
8,	55 57			——	S.S.W. } Whirlwind; snow; quantities of ice, very large and high. A solid body of ice 40 miles in extent.
9,	55 44			——	S.S.E.
10,	56 20	124	28	——	W.N.W.
11,	56 20	121	0	——	Variable; westerly: a long swell from S.S.E.
12,	56 51	120	26½	——	Variable; W. to S.: ice islands.
13,				——	Variable, and S.W.; several ice islands.
14,	56 38			——	Variable; south-easterly; snow and hail: ice islands. Bar. 29.5. ther. 50°.
15,	56 45	109	25	——	Variable; S.Wly; snow showers: several icebergs. Caught a fine albatross.
16,	56 50	104	38	——	Variable; southerly: snow showers and hail.
17,				——	Very variable: few icelands. Bar. 29.7. ther. 51°.
18,	57 18			——	Variable; easterly: three icebergs only.

Jan. 19,	56° 37′S.	97° 26′W.	—— S.S.E.; S.E. by E. icebergs and islands innumerable.
20,	56 59	93 46	—— Variable; N. W ly: stupendous masses of solid ice; thick fog or rain.
21,	57 0	89 43	—— N.W. by W.: thick fog with rain; ice in all directions.
22,	57 0	83 50	—— N.W. by W.; much ice. Bar. 29.2. ther. 51°.
23,	56 59	79 20	—— Westerly: several ice islands; strong gales, with a tremendous sea; shipping water fore and aft. Situation truly awful. Bar. 29.4. ther. 50°.
24,	56 51	78 6½	—— W.N.W.; squally; N.W. fine: no ice in sight; calm and cloudy. Bar. 29.5. ther. 53°.
25,	56 28	73 26	—— Northwesterly, variable: strong gales and squally, with heavy cross sea.
26,	56 49	69 9	At 11h. 58m. A.M: saw the *Isles of Diego Ramirez.*
27,	55 32	64 18	Wind West to S.W. by W.; increasing breezes; albatrosses very numerous.; no Cape pigeons. Bar. 30.4. ther. 55°.
28,	54 37	61 7	—— S.W. to N.W. Passed Cape St. John. Barom. 30.6. and 30.5. (Never saw it so high before.) Thermom. 54½°.

Remarks on the foregoing, by Mr. John Purdy.

The route of the Arethusa clearly proves the important fact, that, far to the northward of a sea comparatively clear, there exist vast masses and barriers of ice of every description, the phenomena about which is precisely similar to the phenomena of the Arctic regions. These masses of ice must certainly have been drifted northward, from the Southern Polar sea, to a parallel from which, to the southward, *they never return*. This we consider as demonstrated by the route of the brig *Tula*, in the same season of the preceding year, or January and February, 1832. The Tula, commanded by Mr. John Biscoe, had pursued an easterly route in a much higher parallel, and found the sea by no means so impeded as it was afterward found to be more to the north. It was between the meridians of 121° and 131° west, that Captain Boulton encountered those masses, and that vast body of ice seen on the 8th, 9th, and 10th of January. This was about seven degrees farther from the Pole than the track of Captain Biscoe; who, as appears from his route, was, under the same meridians, merely incommoded by rain, snow-squalls, and a few icebergs. In about 63° 45′ S. and 122½ W. Captain Biscoe saw several Cape pigeons, which might be an indication of land to the southward. He thence proceeded E.S.E. until he discovered Adelaide Island, (lat. 67° long. 69°) lying off that portion of territory now called Graham's Land. It may, therefore, be observed, that in the latter part, the difference of latitude between the two tracks increases to nearly ten degrees, and that from the Arethusa, in the parallel of only 57°, (long 93°,) stupendous masses of solid ice were seen. It was on, or nearly on, the Antarctic circle, that Captain Biscoe passed many icebergs, both insulated and clustered, with much broken ice.

It may be as well to add, that on the 5th of February, 1833, at about two hundred leagues to the north-eastward of the Falkland Islands, the Arethusa had gained the latitude 45° 45′ S. long. 44° 57′ W., when many sea-birds, sperm whales, and snow petrels innumerable, were seen.[*] Barometer, this day, 30.6, thermometer, 68°. On the 6th, lat. 44° 46′. long. 42° 32′, many birds, with whales, sperm and finbacks, (sea of a pale olive colour,) were seen. Squalls, thunder, and vivid lightning. Bar. 29.4, ther. 65°. Feb. 7th, lat. 42° 21′ S. long. 41° 10′ W. Winds, W. by S. to S.W. Strong gales, and a most tremendous cross sea. Bar. 30.7, ther. 66°. J. P.

To the above, we will add the following from the abstracts of papers read before the Royal Society, on the circumstance of some islands of ice being seen off the Cape of Good Hope, in 1828.

"The journals of the ships belonging to the East India Company," Captain Horsburgh observes, "during the whole of the last century, contain no accounts of icebergs having been seen in the course of their navigation in the southern hemisphere, although several of these ships proceeded into the parallels of 40°, 41°, and 42° south; but during the last two years, it appears that icebergs have occasionally been met with by several ships in their passage, very near the Cape of Good Hope, between the latitudes of 36° and 39°. The most remarkable occurred in the voyage of the brig Eliza, from Antwerp to Batavia, which, on the 28th of April, 1828, fell in with five icebergs in lat. 37° 31′ S. long. 18° 17′ E. They had the appearance of church steeples, and the sea broke so violently against these enormous masses, that it was at first suspected they might be fixed upon some unknown shoal, until, on sounding, no bottom could be discovered."

Captain Horsburgh considers it probable that there exists a large tract of land near the Antarctic circle, somewhere between the meridian of London and long. 20° E., whence these icebergs were carried in a north and north-east direction; and, certainly, the late reported land of Captain Biscoe goes far to substantiate this opinion. But we may conclude, that the general scarcity of icebergs to the southward of the Cape indicates that Enderby's Land, named by Captain Biscoe, is by no means considerable; and this is confirmed by the track of Captain Morrell, who has gone to the southward of it on the same meridian. Captain Morrell also is of opinion, that the space between Enderby's Land and the South Pole is quite clear of land. We may also conclude, that the common occurrence of icebergs in the vicinity of Cape Horn, is at once accounted for by the adjacent land of New South Shetland and Graham's Land, reported by Captain Biscoe, and that the islands St. Pierre and Alexander, reported by the Russian navigator Bellinghausen, in 1821, may be the northernmost part of a tract of land extending to the south-westward from Graham's Land, from whence the ice seen by the Arethusa might have originated. The scarcity of icebergs in a direction from the South Pole towards the Cape of Good Hope, and their numbers to the south and south-west of Cape Horn, certainly indicates that the greatest quantity of land will be found in the latter position.

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[*] Near this place, in 1795, Captain Vancouver, when in search of the "*Isla Grande*," saw many birds, &c.

III.—ON THE ERRORS OF THE SEXTANT. *By Commander H. W. Bayfield, R. N.*

ON considering the astonishing progress of human knowledge, in the arts and sciences, the laws, and the phenomena of nature, within the last four centuries, it will be found that few have been cultivated with greater success than astronomy, or have received greater improvement than navigation. The advancement of astronomy has been founded on the splendid discoveries of Galileo, Kepler, and Newton—names to which many others of more modern date have been added, down to the present time, celebrated for pursuing those discoveries, or for having applied them, in many instances with eminent success, to the demands of the navigator.

In the history of the rise and progress of modern navigation, and of the improvements in its theory and practice, a long list of distinguished names lay claim to the lasting remembrance of mankind. Among those, Napier and Hadley will ever be conspicuous: the first, by his invention of logarithms, afforded the greatest facility in the calculation of the problems of navigation and nautical astronomy; the last, by giving to the world an instrument, the practical accuracy of which is unaffected by the motion of a vessel at sea, supplied the greatest want of the navigator. This occurred in 1731, at the time when the increasing accuracy of nautical and astronomical tables, and the interests of a navigation extensive beyond that of any former period, called for more accurate means of observing the altitudes and angular distances of the heavenly bodies.

Even from the first, Hadley's quadrant enabled the navigator to ascertain his situation on the ocean to a far greater degree of precision than was attainable by the instruments previously in use—the cross-staff, the astrolabe, the quadrant, or the back-staff of Davis, &c. It has since been so improved as to become the most convenient and the most generally useful of instruments; and in the sextant, which is an improvement and extension of the quadrant, the principle is the same, the only difference between them being that one is the eighth and the other the sixth part of a circle.

I need not dwell on the uses of this invaluable instrument; it will be sufficient to observe, that, in navigation, it is the only one with which the mariner can ascertain correctly the situation of his vessel. On shore, the uses of the sextant in astronomy and hydrography are still more extensive. For the determination of the latitude and longitude of places, either by lunar distances or chronometers, its accuracy is such, when skilfully used, with an artificial horizon, as to render other instruments unnecessary; and there are none so portable, and which admit of so much expedition in use.

It is not difficult to acquire the requisite degree of skill to use the sextant correctly, and to make the necessary adjustments; but there are several sources of error in the results of observations, independent of those to be obviated by a strict attention to the adjustments of the index-glass, horizon-glass, and telescope, which require to be pointed out to the inexperienced. One of these is inherent in the instrument, but will be greater or less in different instruments, according to the nature of the material of which they are constructed, and the greater or less degree of care and skill which has been shewn by the maker, with a view to obviate this error. It arises from the elasticity of the index, and the friction in the motion of it on its centre. The second arises from habits of observing, and the eye of the observer. Scarcely any two persons, however skilful and practised in the use of the instrument, will be found to observe exactly alike: some observe closer, others more open; hence there will be a difference in the results of observations of the sun and moon, when different limbs are used. The third usual cause of error in the results of observations, is the neglect of the necessary corrections for the heights of the barometer and thermometer at the time of observation. It is, perhaps, only of late years, that this last source of error has been taken into account among nautical men, or that accurate tables have been made generally public for its correction. In temperatures much above or below the mean temperature, but especially the latter, which occur in winter, when the sun's altitude is low, and its motion in altitude is the least, it cannot be safely neglected.

The causes of error in observations with the sextant, here alluded to, and which ought to be noticed in every treatise on nautical astronomy, are not generally known among seafaring men, or the errors arising from those causes are considered of so little consequence, that they are usually neglected. At sea this is not of much importance, excepting in the observation of lunar distances, because there the errors arising from other causes, the uncertainty of the terrestrial refraction, and an undefined horizon, are much greater than those to be now treated on. But, on shore, in the determination of the latitude and longitude of places, and of the error of chronometers, these errors become of great consequence, and must not be neglected, if accuracy be desired or expected. The common errors of the instrument will not be noticed here: the observer is supposed to be furnished with a good instrument, well divided, fitted with good glasses and screens, and that he attends properly to its adjustments, especially that of the line of collimation of his telescope, among the rest; which may be particularized, because it is too often neglected among seamen, although the error arising from it, in large angles, and consequently in the longitude deduced from lunar distances is frequently very great.

The first error which may be considered, is that arising from the elasticity of the index. In some sextants this is very great, and usually the greatest in the largest instruments, because in them the index is longest. In a large sextant, the error arising from this cause will sometimes amount to 30″; that is, if the index be moved *forward* in measuring the sun's diameter to ascertain the index error, the latter may be 30″, whilst if it be moved *backward*, it will be nothing. This, perhaps, is quite, or nearly, an extreme case, but it is one which actually occurs in a large sextant by Troughton, otherwise a most beautiful instrument. In our other sextants, which are smaller, it is much less.

The neglect of this may therefore produce an error of half a minute of a degree, in a lunar distance, or in the altitude with the natural horizon, and of half that amount when the artificial horizon is used.

To avoid this error, let the index be moved in the same way in finding the index error, as it has been in making and finishing the observation. Thus, in observing for apparent time, A.M. when the sun is rising, it is usual to move forward the index with the tangent screw, as the altitude increases; whilst in similar observations, P.M. when the sun is falling, the tangent screw is turned in a contrary direction. The same thing takes place with rising and falling stars. A separate index error must therefore be found for each of these cases, by moving the index forward for A.M. and backward for P.M. observations. The same thing must be attended to in all other observations; for latitude, lunar distances, &c. In observing equal altitudes, for apparent time, it is especially necessary to attend to this cause of error, and to take care, in setting the instrument to the altitudes in the afternoon, to move the tangent screw in the same direction as was done in the morning.

The second error, to which the observer is liable, arises from the defects of his own eye, or his habits of observing. He may be in the habit of observing either too close or too open, and in either case, the results of his observations of the lower limb of the sun or moon, will differ from those obtained from observations of the upper limb. I have deduced from a comparison of numerous observations the amount of this error in my own case. The method which I adopted was this: I have occasion to take a very great number of observations for apparent time in every month of the year, and I have made it a rule to take sets of seven altitudes by the upper limb, and an equal number by the lower limb. A great number of these, calculated separately, were found to produce a mean difference in the error of the watch, varying in quantity inversely as the motion of the sun in altitude, and corresponding at all times to 10″ of a degree of double altitude in the artificial horizon, or to 5″ of absolute altitude. The difference was invariably in one direction, and was always the same within a tenth or two of a second of time.

In A. M. observations of the lower limb, the suns separate in the artificial horizon. In P. M. observations, they close.

In A. M. observations of the upper limb, the suns close in the artificial horizon. In P. M. observations, they separate.

Now, by my eye, and with my habit of observing,

The L. L. obs. A. M. give + slow or — fast: too much apparent time, therefore too much altitude. The sun, in ascending, had not reached the altitude to which the instrument was set, because I called, Stop, too soon, before the separation of the suns was completed. I have therefore observed too close.

But L. L. obs. P. M. give — slow or + fast: too little apparent time, therefore too much altitude. The sun, in descending, had passed the altitude to which the instrument was set, because I called, Stop, too late; not till after the suns had slightly covered each other. I therefore observe too close.

Again, U. L. obs. A. M. give — slow or + fast: too little apparent time, therefore too little altitude.

And U. L. obs. P. M. give + slow or — fast: too much apparent time, therefore too little altitude. The circumstances of the upper limb, in the morning, are the same as those of the lower limb, in the afternoon; and so are those of the U. L. in the afternoon, and L. L. in the morning.

In all cases, therefore, the limbs appeared to me merely to touch, when, in fact, they overlapped 2″ 5 of a degree, or 5″ in the artificial horizon, so that if we were to compare observations of the L. L. with observations of the U. L., (for the rates of the chronometers or difference of longitude,) supposing them both to be observed in the morning, or both in the afternoon, we should have an error in the apparent time, answering to twice 2″,5=5″ of absolute altitude, or 10″ in the artificial horizon. But an error of 5″ in altitude, or 10″ in the artificial horizon, which produces a corresponding error in the apparent time of only about half a second in June, when the sun's motion in altitude is at the quickest, will cause an error of about *two seconds* in the apparent time, in December, when the sun's motion in altitude is at the slowest, and when from the low altitude, in these latitudes,[*] it is not possible to observe in the artificial horizon, at more than 1¼ hour's distance from noon. This error might be avoided by comparing observations of the L. L. A. M. with those of the U. L. P. M., or of the U. L. A M. with the L. L. P. M., because the U. L. P. M. separates in the artificial horizon as the L. L. A. M. does, and because the L. L. P. M. closes as does the U. L. A. M. But it is best to observe both limbs at all times. Even when equal altitudes are taken for apparent time, because although the altitudes will be equal with the same limb, A. M. and P. M., yet by neither limb alone do we get the correct altitude, the lower limbs giving too much and the upper too little altitude, in the case which I have stated, consequently the elapsed time between the A. M. and P. M. altitudes will be different with one limb, from what it is by the other. This, perhaps, will not be ever sufficient to affect the equation of equal altitudes, but it is as well to avoid all possible chances—even the appearance of error. In all observations for latitude, equal altitudes included, it becomes necessary to attend to this error, because there the altitudes, shewn by one limb, are different from those shewn by the other, and there will be a corresponding difference in the latitude.

From the preceding remarks and observations it will be seen, that this error is, at all times, of sufficient consequence to be worthy of notice, where accuracy is desired; and it is so easily obviated, that its neglect would be inexcusable.

⁂ Note + slow or — fast, refers to the error of the chronometer. Thus in the first case, as above the lower limb observation A. M., make the chronometer + or too much slow, or — or too little fast. Note L. L. signifies Lower Limb, U. L. Upper Limb of the sun.

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[*] River St. Lawrence.

(To be concluded in our next.)

IV.—NOTES ON TONGATABOO, *the principal of the Friendly Islands; its Present Condition; and the means of establishing Religion, Civilization, and Commerce, throughout the Islands. By an Officer of H.M.S. Zebra.*

[The flagstaff at Nickafoloa is in lat. 21° 7′ S. and long. 175° 12′ W.]

THIS interesting island, from its population and importance, is the principal of the Friendly group; and the Hapaees and Vavoa may be considered subject to Tonga, as it is generally termed, although they have each their distinct chiefs. The following are the names of the chiefs at Tongataboo, when the Zebra was there in 1832:

Tonbona, the King, at Nickafoloa—A Christian.

Faé of the Bea	A very good man, and likely to become a convert t Christianity. His son is a Christian.
Fatu .... Mua Ata .... Hihife Fua Fue Hahekà	Idolaters.

Christianity was first established at Tongataboo in 1829, and Tonbona was among the foremost of his countrymen to embrace it. At the close of that year, the total number of natives who renounced Paganism was 218.

The *Government*—Elective. The *prevailing Religion*—Pagan.

Christian Missionaries, Wesleyan Connexion.—Mr. Thomas, who is now on the island, was the first who invaded this strong hold of idolatry in 1826. An excellent patent printing-press is set up, from which many copies of the scriptures are struck off. At present the missionaries are in want of paper and medicine.

Population, including the Hapaees and Vavoa—from 16 to 17,000; and increasing.

Number of Schools—Fourteen.

Native Exhorters—Twenty, including several leaders of chapters.

The total number of the natives who listen to the truths of the gospel, attend church and prayer-meetings, and who may be expected gradually to fall into the bosom of the church, may be safely estimated at 8,000.

The centre of Tongataboo, the Hapaees and Vavoa, may be considered the strong hold of Christianity.

The trade of the island is unimportant, but a small quantity of tortoise-shell, cocoa-nut oil, mats, tapa, clubs, spears, and stock, may be procured by bartering hatchets, cloth, knives, &c. &c.

Good moral people, to set a good example to the natives, are as essential now at Tongataboo as more ministers of the gospel. It is the only point in that quarter that can be considered of consequence; for, from Tongataboo the whole of the Friendly and

Fejee Islands would receive instruction of a moral and religious nature, and it might soon be made the centre of a lucrative trade in tortoiseshell and cocoa-nut oil.

The Island of Tongataboo is low, and in some places marshy; but the climate is, nevertheless, very healthy. Sugar-cane is indigenous, and indigo, cotton, flax, and rice might be grown to great advantage, as also the cactus, for the cochineal insect, and the mulberry for silk-worms. Cattle might be imported from Tahiti.

The natives of Tongataboo are a high-spirited, intelligent, and ingenious people; they are robust, docile, and with judicious treatment might be easily managed. The men work their canoes with great tact, in the most boisterous weather; therefore, like the New-Zealanders, they would soon make good seamen. And the women, like those of Tahiti, would soon equal them in the fabrication of straw bonnets, and other pursuits suitable to female industry.

As the natives of Tongataboo are entirely indebted to the Wesleyan missionaries for every thing that has been done, for the advancement of Christianity, by preaching, and disseminating the holy scriptures in the native language, the Wesleyan connexion is the best adapted for the formation of a colony there, or for the selection of persons to settle on that island; for I am well assured that not only Tonbona, the present chief, but those next in authority to him, would willingly give or sell such tracts of ground as might be necessary. These chiefs are too sensible of the good effects to be derived from an intercourse with Great Britain, not to grant every facility to accomplish this desirable purpose; but it should not be forgotten, that it is incompatible with the exalted station which preachers of the gospel hold in society, (particularly among the heathen,) to unite the duty of the missionary with the occupation of the trader. It is only by a free intercourse with the more moral portion of European society, at once combining the force of example with religious instruction, that the manners, customs, and religion, of the natives of this immense archipelago can be changed, or their present state ameliorated. The introduction of a better class of people among them, under an efficient and discreet leader, would at once destroy the baneful effects produced on their morals by the hordes of runaway sailors from whalers, and convicts, who unfortunately constitute the majority of the white population of Tongataboo. These abandoned and licentious men, by their ill-conduct, not only disgrace the character of their country, but tend directly, by their bad example, to neutralize the continued exertions of the missionaries, and to add to the demoralizing habits which paganism always exhibits.

The Wesleyan connexion is the proper one to finish the good work it has begun, because all difference of opinion arising from a difference of faith would be thereby avoided. It cannot be doubted, that, to complete the benevolent views of the institution, a little colony should be established on Tongataboo. The persons to form it should consist of about twelve artisans, with their wives: the men should consist of carpenters, shipwrights, blacksmiths, a cooper, and shoemaker; the women should be able to read and write, and teach sewing, spinning, &c., and make themselves generally useful: and all should be under the charge of a superintendent of firm, but mild and conciliatory habits, possessing some power from the government, to give authority to his office. There can be little doubt that such power would be readily granted, provided the appointment did not add to the expense of the crown. With a colony so appointed, and which, by a joint-stock company, would not be attended with great expense, (for money would not be so much required as goods for barter,) a most beneficial and lucrative trade would soon be established, and Tongataboo would become the emporium of this trade. Whalers are continually arriving at this island, for the purpose of obtaining refreshments, and refitting, as the anchorage off Nickafoloa, or Maria Van Diemen's Bay, is good. At this place there is now a European blacksmith's establishment, also that of a carpenter; and they both have more work than they can perform. Unhappily, they are drunken, worthless characters; and had it not been for their professional utility, Tonbona would have sent them away by the Zebra.

By an establishment of this nature, a mart would be opened for the distribution of European manufactures throughout the whole of the Friendly Islands, as the chiefs, and others, would flock there from all quarters for the purposes of trade. Thus, industrious pursuits would be encouraged, the blessings of civilization would be extended, and moral and religious instruction greatly accelerated; the natives, moreover, being protected from foreign invasion, and from the rude and insulting behaviour of our own renegade countrymen, would hail our presence among them with the strongest feelings of gratitude. If a ship of war were sent to the islands, direct from England, for three or four years, instead of one annually going there from India for a few months, much benefit would result, as her captain would be always present to act as occasion might require, for the protection and benefit of the colony. The government of New South Wales would willingly furnish one or two small vessels, as tenders, to be manned from the ship; and with these the whole of the islands might be visited every year, instead of, perhaps, once in four or five years, as at present. At the same time, much care would be necessary in the selection of the commander to perform this service, for one intemperate deed on his part would injure our interests more than twenty good actions could restore.

An opinion of the present condition of the natives may be formed from the following facts:—One of the marines of the Zebra purchased half a sovereign of a native for two empty wine-bottles, and the boatswain was offered an English shilling for three bottles, because it was larger than the half-sovereign!

V.—*Extract from the Records of the King's Remembrancer's Office at the King's Mews:—Sir Martin Frobisher's Voyages for the Discovery of a North-West Passage.*[*]

"At a time when the attention of this country is still directed to the Arctic Regions, notwithstanding every exertion made for the discovery of a north-west passage has hitherto proved unavailing, it is conceived that an insight into the undertakings of those daring adventurers, who, at an early period of navigation, had the courage to encounter those unknown and perilous seas, must afford much interesting information. Under this impression, the Record Board may not be displeased to have some details respecting a bundle of papers discovered in the Exchequer, containing the accounts of the Three Voyages of Martin Frobisher 'for the discoverye of Catay, &c., by north-west,' in the years 1576, 77, and 78; and of the freight brought home from the 'Meta Incognita:' and, although no journal is attached, many interesting facts may be collected.

"The papers are the accounts of Michael Lok, Treasurer of the Company of Cathy, &c.; and the lists of subscribers contain the names of all the distinguished characters of the reign of Elizabeth, including the Queen herself; and on some of the accounts are evidently the observations and explanations of Martin Frobisher himself, in his own handwriting.

"The amount of subscription to the first voyage was £875, which seems to have been wholly unsuccessful, by the observation in the second page, 'and so by this first voyage is spent and lost of the £875 the sum of £800, which God restore.' The ships engaged in this voyage were the Gabriel, Michael, and a pynasse: they left Gravesend the 12th June, 1576; the Michael returned to Blackwall the 1st of September, and the Gabriel to Harwych the 2d of October following—the pynasse was lost.

"Amongst the payments is the bill for maps and nautical instruments used on the voyage following:—

Paid for a Book of Cosmographie in French, of Andreas Thevet making	£2	4	0
Paid to Humphrey Cole and others as follows:—			
For a greate Globe of metal in Blanke, in a case of leather	7	13	4

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[*] An account of Frobisher's three voyages is contained in a popular work—*Barrow's Chronological History of Voyages into the Arctic Regions*, pp. 77—96. Captain Edward Fenton, afterwards attempted to discover the North West Passage on the side of the Pacific.—*Barrow*, p. 97.

For a great instrument of brasse named Armilla Tolomæi or Hemisperium, with a case	4	6	8
Paid for an instrument of brasse named Sphera Nautica, with a case	4	6	8
For a great instrument of brasse, named Compassum Meridianum, with a case	4	6	8
For a great instrument of brasse, named Holometrum Geometricum, with a case	4	0	0
For a great instrument of brasse, named Horologium Universale, with a case	2	6	8
For a ringe of brasse, named Annulus Astronomicus	1	10	0
For a little standing Levell of brasse	0	6	8
For a case, with small Instruments for Geometrie, of yron	0	6	8
For an instrument of wood, a Stafe named Balistella, with a case	0	13	4
For a very great Carte of Navigation	5	0	0
For a great Mappe Universall of Mercator, in prente	1	6	8
For 3 other small Mappes, prented	0	6	8
For 6 Carts of Navigation written in blacke parchment, whereof 4 ruled playne and 2 rounde	2	0	0
For a Bible, Englishe, great volume	1	0	0
For a Cosmographical Glasse and Castell Knowlege	0	10	0
For a New World of Andreas Thevett, Englishe and French books, 2 smalle	0	6	8
For a regiment of Medina, Spanishe	0	3	4
For Sir John Mandevylle, Englishe	0	1	0
For a Carte of Orelius, prynte	—	—	—
For 20 Compasses of divers sorts	3	3	0
For 18 Hower Glasses	0	17	0
For a Astrolabium	3	10	0

"The following drugs, furnished by Hewe Morgan, grocer, shew the contents of a ship's medicine-chest in the reign of Elizabeth :—

"Ambra Grisi oriental—Cibetti—Moschi oriental—Agallorbi—Ligni Aloes—Rabarbe Agarisi—Turpenti—Diagridii—Cipri Indici—Turmerick—Calam Aromatici—Irios—Galanga—Mirrha, fine—Mastichis—Argenti viti—Laddiri—Anmne gomme—Oppoponax—Oppen—Alloes—Bellzonica—Styrax Calnuc—Myrobboralia chebue—Bellerichi—Indiovu citrini Ledoria—Spica nardi—Cardamomi—Ligni Rhodi—Colocuthis—Margarite—Boli oriental—Lapis Lazuli—Cantalii Citemi—Corallina—Coralli Rubili—Borax—Camphora—Castorium.

"The goldsmith's bill for gold and silver rings, and a few jewels, both *right* and *counterfecte*, amounts to £5. 6s. 4d., and includes a plate of copper, with nine holes, for measure of pearles, and also a touche-stone.

"The merchandize carried out for trade consisted of woollen, linen, hardware of brass and iron, and cutlery of various descriptions, particularly specified.

"No mention is made of what land they discovered; but that they brought over one of the natives, who died here, may be collected from the following items :—

Paid forApparrell for the strange man of Cathay or new land India	£1	10	0
Paid Mr. Crowe, the surgeon, for opening of the India man and balmyng him dead	5	0	0
For Bedding for him spoyled in his sickness	0	16	0
For household charge, Potticarye in his sickness, and folke highered to tend him and wind him	1	10	6
For a Coffyne, bran to pak him and other	0	11	4
For Wax to make his Mold in pictur	0	10	0
Paid Cornelius Kettell, payntar Ducheman, for making a great Picture of the whole bodye of the strange man in his garments £5 0 0			
and the Joyner for a frame and case for it, 13s. 4d., which was given the Queen's Majesty 0 13 4—	5	13	4
For another lyke Picture and frame for it, which is for the Companye	5	8	0
For two other small Pictures of his head	2	0	0
Paid Wm. Cure, Duchemane graver, for making a Mould of hard earthe of the Tartar man's ymage to be cast in wax	1	13	4

"The subscriptions for the second voyage amounted to £5,150, and the expedition consisted of the two ships Michael and Gabriel, together with the Ayde, a ship purchased of the Queen for £750, with a present of £100 to the Lord Admiral besides.

The ordnance and warlike store amounted to	£467	5	10
The victuals, &c. to	963	18	3

"And a very large assortment of merchandize of every description, which is particularly specified in this account.

"On this voyage they took out three 'goldfynars' and a number of 'minars,' with tools and apparatus.

"The expedition consisted of 143 persons, viz. 36 officers and gentlemen, 14 'mynars and fynars,' 64 mariners on board the Ayde, 16 in the Michael, and 13 in the Gabriel. They were absent some months, and returned the latter end of November, bringing with them a quantity of mineral ore (ewar), on which assays and experiments were made in two small furnaces erected at the Queen's Storehouse on Tower Hill, by John Baptista Agnello, Jonas Schutz, and Robert Denam, which two latter went to Windsor to report the result of the proofs. The consequence of which was, an agreement was made with the Lord Treasurer for certain premises at Dartford, on which mills and furnaces were erected on a large scale; the charges for all these proceedings are set forth at length. Besides the ore brought to the Tower, 140 tons were landed from this voyage at Bristol, from the ships Ayde and Gabriel, and then brought to Dartford.

"On this occasion they likewise brought over a native man, woman, and child; the man and woman died at Bristol. Mr. Frobisher is allowed a payment of £17. 18s. 5d. at Bristol for apparel and expenses of the strange man and woman there—the child was brought to London.

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NAUTICAL MAGAZINE,
&c.

SEPTEMBER, 1833.

HYDROGRAPHY.

Note.—**All bearings are Magnetic, unless otherwise stated.**

56.—The Montague Shoal, Ionian Islands.
Least Water, 7 *feet.*

The Montague shoal is formed by a dangerous bed of rocks lying in the northern part of the channel between Zante and the coast of the Morea. It consists of two distinct patches, in a N.W. and S.E. direction from each other. The following remarks on them are given by Mr. W. Parker, when acting master of H.M.S. Meteor, in 1830:

In sailing from Zante Bay, and being bound to the northward, with a northerly wind, stand over towards Cape Klarenza, in order to avoid the baffling winds under the lee of Black Mountain, (Island of Cephalonia;) but in doing so, take care to avoid the Montague rocks, which lie in a direct line between the north end of Zante and Cape Klarenza. They bear from the former W. b. N. ¼ N. and E. b. S. ¼ S., nearly seven miles from the latter. At night, you will see the light on the north point of Zante Bay. This light must not be brought to the westward of S.S.W., which will clear them to the westward. The least water on the Montague rocks is seven feet, and there is not more than fifteen or twenty fathoms for a quarter of a mile round them. If bound from Zante to Corfu, it will be advisable to pass between Zante and Cephalonia, as the channel inside the islands is subject to calms, and a vessel may be becalmed for two or three days there, while a fine breeze is blowing outside.

Mr. Thomas Elson, master of the Royal Navy, gives the following clearing marks:

St. George's Castle, in Cephalonia, on with the high bluff of Cape Scala, leads half a mile to the northward of them.

Great Hill open to the westward of Mount Keri leads to the eastward of them.

References to the Views from the Shoal.

a—Castel Tornisi, distant seven miles on the coast of the Morea. The declivity to the southward (right) over the middle of the white cliff bearing S.W. b. W.

b—The foot of Mount Skopo to the S.E. of the town of Zante.

c—The citadel of Zante bearing S.W. b. W., distant nine miles.

57.—ROCK OFF CAPE TORIÑANA, NORTH-WEST COAST OF SPAIN.
The Sea breaks over it.

On the 26th of May last, H.M. steam-vessel African, returning from Lisbon, struck on a sunken rock off Cape Toriñana, with the following bearings :

Cape Finisterre......	S. b. W.
Cape Toriñana	E.S.E. distant one mile.

In October, 1832, the same rock was observed by Mr. W. M. White, acting master of H.M. steam-vessel Confiance, when the sea was breaking over it. The charts of this coast are on too small a scale, in general, to shew distinctly the position of a rock, even at the distance of a mile from it; and we therefore caution navigators from making too free with so dangerous a coast, on which it is more than probable that there are many unknown dangers.

58.—ROCK IN LAT. 20° 15′ N. AND LONG. 70°. W.
North Coast of St. Domingo.—From a correspondent.

Custom-house, Montego Bay, Jamaica, March 5, 1833.

For the public information, and especially to warn mariners of a sunken rock not laid down in the usual charts, we consider it expedient to subjoin a copy of part of the declaration made before us this day, by the first mate of the British barque Fletcher,* wrecked on her passage from Liverpool to New Orleans, on the 26th ult., and request the insertion thereof in your newspaper.

JOHN ROBY, Collector.
N. ASHBY, Comptroller.

To the Editor of the Cornwall Chronicle.

"Nicholas Lang declares, that he was first mate of the British barque Fletcher, of Maryport, John Scott master, and that the said vessel sailed from Liverpool on the 18th of January, 1833, bound for New Orleans, with a cargo of salt and earthenware, and other merchandise; and that on 28th February, when in full sail, she struck upon a rock, not laid down in the charts, and in consequence thereof sprung a leak; and, notwithstanding every exertion at the pumps, the water gained so considerably, that the next day the captain and crew abandoned her in two boats, but remained by her until about noon, when they saw her go down. The two boats steered for St. Domingo, and off the Tortugas parted company; the captain, with four men and a boy, proceeding, as he said, for Kingston; and the mate, with eight men and a negro boy, were picked up off the east end of Cuba, by the British brig Lerwick, R. G. Moran master, bound from Norfolk, Virginia, to Montego Bay, in Jamaica, on 2d March, and arrived here on 4th of the same month.

"The rock on which the Fletcher struck, at half-past eight P.M. of 28th Feb. was, as he thinks, by observation at noon, and by chronometer, in lat. 20° 15′ N. and long. 70° W. The captain took with him all the ship's papers."

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* No. 321 in our Tables of Wrecks.

59.—REMARKS ON THE PASSAGE TO, AND NAVIGATION OF, THE NORTHERN COAST OF BRAZIL. *By Capt. The Hon. W. Wellesley, R.N.*

(Concluded from page 441.)

FROM MARANHAM TO SAN JOAO, SELINAS, AND PARA.

On leaving Maranham for San Joao Island, I steered N. and N. b. W., until nearly on its parallel, when, hauling in to the westward, I made the eastern part. The land here may be known by a small white patch of exactly the same colour as the Lançoes Grandes. It is very remarkable, for the surrounding country has verdure about it, and the sand is whiter, and has altogether a different appearance. At these Lançoes is the narrow passage between San Joao and the main. This eastern, or north-eastern, side is pretty bold; I approached it to about four miles, and it being calm, and a strong tide running, I anchored in 9½ fathoms.

Continuing along, you lose sight of the Lançoes, and come to the eastern point, which is low, sandy, and has a shoal off it which always breaks. I rounded this in 10 fathoms: on approaching it, over the sandy ground, a green and woody point appears, which has a peculiar shape, from the trees at its extremity being withered or stunted; it seemed to me at first sight as if a mist were coming over the land. I am thus particular, because the sight of this point, or rather the certainty of it, is requisite, to take up a good anchorage. It should not be brought to bear to the southward of east, and you should not open a river, the entrance of which is just to the southward of it. But the best anchorage by far is to round the breakers in 10 fathoms, and anchor at about a mile from the shore, in not less than 8 fathoms, and tolerably close to them.

I would here warn future navigators who are making the coast, or leaving Maranham for the coast to the westward, to choose three or four days after the full or change of the moon for the time of starting, as the tide runs so very strong. In the Sapphire it happened that we entered this anchorage during their greatest strength, and upon the flood. Many of the shoals only shew upon the ebb. We were driven upon their edge, and anchored in 7 fathoms, supposing ourselves in a safe position. When the tide turned, breakers were discovered within twenty yards of us; and it is probable, had not the wind and tide favoured us, we might not have got clear without difficulty. The tide was found running full four knots.

Having been once at San Joao, I should have no hesitation in taking the ship in again; but I would do it with the ebb tide, and, if possible, the quartering of the moon.

Fresh beef may be procured in abundance at the hut to the southward, where dwells a Brazilian, to take care of a quantity of cattle, the proprietor of which lives on the main land. The best landing is just round the south point.

You may also land at Woody Point, and cut fuel; but if you remain there during the flood, you will hardly pull through the entrance of the river, the tide runs in so violently.

I did not see any water; that which divides the island into so many parts is brackish.

It is reported that slavers have occasionally landed their cargoes at Jabouroca, and have come to anchor where the Sapphire lay, to get intelligence.

Without good reasons, I certainly would not recommend a large ship anchoring here.

From St. John's to Selinas the land is low. I steered N.W. b. W. and N.W. until I had passed Cape Gurassi, off which extends a shoal of three miles, or, as some say, more. I am given to understand that this bay is not so deep as laid down in charts, and that vessels mostly anchor off the shoals. There are generally a good number of troops at Gurassi, and sometimes a Brazilian man-of-war. Diamond mines are in the neighbourhood.

From thirteen to fifteen fathoms is a good bottom to run along the coast in: at this depth you are always well off the land. Whenever I ran in with the land, the soundings were found to decrease very gradually to twelve, eleven, and ten fathoms. We had the wind at north, which enabled us to lie off the land.

Until I arrived at Mount Atasia, the only points I distinctly made out were Caiti, which is a long low green point, and Mount Pirausa, which may be known by the red cliffs about it; but you must be pretty close in, to make the red out clearly. The directions in an old book say that Mount Atasia has a watch-tower upon it, with a gun, which is sometimes fired when a vessel is seen approaching. This is not the case at present,* whatever it might have been formerly. I have heard there is an old unroofed house standing, but I could not see it at three miles' distance. This is essential to know, as, running down the coast without a pilot, one naturally looks for what is said to be a guide for Selinas.

Mount Atasia is rather a high point, with reference to the land around it, and there are two or three remarkable patches of land on it; and to the eastward, between it and Port Caiti, coming from seaward, it makes very distinctly: the point and white patches cannot be mistaken. From the eastward, its extremity makes like an island, and a white patch and point about eight miles from it might be mistaken for the mount itself. I anchored off this patch in 10 fathoms.

Running any distance, as five or six miles from the shore, Selinas, the pilots' station, is difficult to make. As you open the land to the westward of Atasia, looking carefully, a small white house will be discovered, with a red streak behind it.

The white house is the chapel, and the red the tiled roofs of the cottages. It stands upon ground rather more green than the surrounding country. I observed it to make better coming more directly from the northward, the whole village presenting a larger appearance.

The best anchorage is with it bearing from S. b. E. to S.E. b. E. in from 7 to 13 fathoms of water. In the Sapphire we anchored with it bearing S. b. W. (off a spit which runs off Atasia) in 7 fathoms; but the ground is foul at this anchorage. If there be pilots† at the station, two lights are shewn for a few minutes soon after sunset; if none are to be had, one will be shewn; and if there be any, (but they have no boats,) three lights will appear. In sending a boat ashore, the passage in is between two breakers, a little to the westward of the village: opposite to it a very heavy surf runs.

I must not omit to mention the strong easterly and south-easterly current that we found running from San Joao to Selinas. Whenever we were at anchor, the flood was found to set S.E. and the ebb East. The pilots informed me this was always the case from December to May or June, owing to the heavy rains. The Pickle not knowing of this, found herself set from Atasia back again to the Bay of Turnivassa, and was unable for some days to make head against it; and the captain of a French man-of-war brig made the same observations upon it.

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* This confirms the statement of Captain Thomas, of the brig Margaret Richardson. See Naut. Mag. No. 16, p. 311.

† See Naut. Mag. No. 10, p. 510, for a statement of the pilot signals of Selinas, and some further directions for Para, by Lieut. E. Stopford, R.N.

From Selinas a W.N.W. course leads you clear out to Marassani, which is a sandy point. We kept away afterwards to W. b. N. and then to West, running in from 7 to 13 fathoms; and when Point Caracua (a low green point which came in sight when Marassani was on our beam) bore south, we saw the Braganza breakers. They always shew themselves, and you may run round them by your eye in 9 or 10 fathoms. In rounding them, we kept gradually away from W. b. S. to S.W. and then to S.W. ½ S. and S.W. b. S. to run up the river. Bahia de Sol and the Bay of St. Antonio are the places preferred by the pilots for anchorages going up or down. At other parts you are not so safe, being very liable, owing to the foul bottom and ground swell, to lose your anchor or snap your cable. The same observation applies to the coast in general. It is better, if there be sea-room, to stand off and on, than to run any of these risks.

In running up the river, Point Taipee should be noticed, with a small islet off it, for it is from this point that a departure is taken by the pilots, on leaving the river. The western channel is in this case most commonly used. Having brought Point Taipee to bear from S. b. E. ½ E. to S.S.E. they steer north, which takes you out clear of all the shoals. When you are clear, pursue a north course, if possible, and you need think no more of the coast; but if the wind is foul, no immediate danger need be apprehended at from N.N.W. to N.E.; but in this event it will be better to anchor, should the wind be light and the flood-tide be running.

Off Para it is better to anchor close to the town: the nearer you are, the deeper the water.

The tide runs very strong, but the water being shoal, 30 fathoms on each chain is enough to moor by. The large mooring-swivel supplied to H.M. ships is recommended to be used.

Fresh water is procured alongside, which is of a very good taste; but being somewhat dirty, or rather muddy, it should be strained through buntin in running into the tanks.

On leaving Para you may expect a strong northerly current, until you attain the meridian of Cape North. It set the Sapphire for two days at the rate of a mile and a half an hour. Afterwards she experienced even a stronger westerly one, against which precautions should be taken, if a course be steering for the West Indies.

60.—Geographical Collections: Navigation of the St. Lawrence.

In the 14th number* of our work, for April last, we inserted as many geographical positions on the banks of the River St. Lawrence,† determined by Commander Bayfield, as had then reached us, and we now give a continuation of them below the island of Anticosti. We have also added to them variations of the compass, and the times of high water, as determined by Captain Bayfield, and the officers employed under him, in the valuable survey of the St. Lawrence now going forward :

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* Page 181.

† Assuming Quebec in 71° 16′ W.

	Lat. N.		Long. W.		Var. W.	
NORTH SHORE.	°	'	°	'	°	'
Point de Monts, South Extreme	49	18,8	68	26,4	20	0
———— Light-house	49	19,7	68	25		
Egg Islet, near N.W. point	49	38,3	68	13,2		
Cawee Island, West point	49	49,5	67	4,9	22	0
Point St. Margaret	50	2,5	66	47,7		
Carousel Island, South Extreme	50	5,5	66	26,6	23	55
Bay of Seven Islands, Store in	50	13,1	66	27,1		
River Moisic, S.W. point of Entrance,	50	11,4	66	7,7		
Point St. Charles, South Extreme	50	15,4	65	51,8		
Manitou River, East point of Bay	50	17,7	65	17,1		
St. John's River, South point of Entrance	50	17,2	64	13,3		
Mingan Harbour, Sandy point on N. side	50	17,5	64	4,9	25	30
Clear-water Point, S.W. Extreme	50	12,6	63	30,1	27	28
Watchee Shoo Bay, East point of	50	16,7	63	1,1		
Nabesippe River, S.E. point of Entrance	50	14,0	62	15,8	27	55
Natashquan River, S. point of Entrance	50	7,1	62	50,3		
Kegashka Bay, Islet in West Corner	50	11,5	61	18,8	28	34
SOUTH SHORE.						
Cape Chat	49	6,0	66	48,3	21	0
Mount Louis River, Entrance	49	14,6	65	46,6	21	30
Great Fox River	49	0,1	64	25,9		
Cape Gaspee, Flowerpot Rock	48	45,2	64	12,1		
Gaspee Basin, North point	48	49,9	64	31,4	22	04
Cape Despair, Chaleur Bay Entrance	48	25,5	64	21,3		
ANTICOSTI.						
West Point	49	52,3	64	35,1	24	22
Cape Henry	49	47,8	64	25,7		
South-West Point	49	23,9	63	38,8	23	0
South Point	49	3,7	62	18,5	23	45
East Point	49	8,4	61	43,0	25	19
Bear Bay	49	30,5	62	27,5		
North Point	49	57,7	64	12,0	24	0

HIGH-WATER AT FULL AND CHANGE.

North Shore.			*South Shore.*		
Trinity Bay	2	0	Mount Louis River	1	15
Lobster Bay	1	50	Great Fox River	1	15
Bay of Seven Islands	1	40	Head of Gaspe Bay	1	50
Mingan Harbour	1	30			
Betchewun Harbour	11	30	*Anticosti.*		
Kegashka Bay	11	0	Ellis Bay	1	40

61.—Directions for Nassau Harbour, New Providence.

Vessels approaching Nassau in tempestuous weather, when the pilot cannot cross the bar, by observing the following directions, may come safe over, when the pilot will be ready to receive and conduct them to their anchorage :

On a white flag being hoisted on the point of Hog Island, near the light-house, a boat, with a white flag flying, will be in readiness within the bar;

the vessel will then steer in, giving the point of Hog Island about 80 fathoms distance, and keeping Toney's rock, (a small rock within the bar, on which the beacon is erected,) and the west end of Fort Charlotte barracks, in one; keep this course until you bring the white flag on the point to bear east, then put your helm to starboard, and keep for the boat. It sometimes happens, that the sea breaks from point to point, even in moderate weather: when this is the case, and the wind should be to the south of east, it would not be prudent for vessels of large draught of water to enter, as there is not more than seventeen feet water at low tide, on the bar.—*Nassau Gazette*, 1833.

62.—DIRECTIONS FOR TONGATABOO ANCHORAGE. *Friendly Islands, Lat.* 21° 7′ S., *Long.* 175° 12′ W., *by* MR. DAVID DUNCAN, *Master of H.M.S. Zebra.*

Ships running for Tongataboo should try to make the Island of Eoaa, which is moderately high; and if toward evening, should keep off and on during the the night, not losing sight of it, if possible, as there is a current setting to the westward.

At daylight bear up for the Island of Eooaige, which leave on your starboard hand, keeping over towards the reef surrounding the Island of Tonga, which makes low. As you draw in, keep close to the reef on the larboard hand, for the passage, which cannot be seen until close to; but with a good look-out at the mast-head, and keeping the larboard reef close on board, it will be seen on the starboard-bow.

In the narrowest part of the passage there is a sunken rock, which you will avoid by still keeping the larboard reef close on board. After passing this, you have a clear passage up to the anchorage, which is either under some small islands to the eastward; or run to the westward, and anchor in 16 fathoms, about a mile from the shore, abreast of a flagstaff erected by the missionaries, on which is generally a flag.

There is a pilot; but he seldom comes out until you have passed the narrowest part of the passage, and then he is not required. The course is N.N.W. ½ W., which will take you clear of all danger, by keeping a look-out at the masthead. It is high-water at full and change at eight o'clock, and the rise of tide is 8½ feet with easterly winds.

In running up to the northward, you pass Hoonga Hapy, and Hoonga Tonga, represented in the charts as three islands, but there are only two. They appear to be clear of danger, and only require to be kept at a reasonable distance. We passed close to Toofoa, known by having a volcano on it, which was smoking at the time. There was no danger off that island, that we could see.

We saw some smoke on Amargura, the northernmost of the Friendly Island group, and thinking there might be some cast-away Europeans on it, we sent a boat in shore, which could not land, the surf being so heavy; but the natives swam off with cocoa-nuts. We could see no danger near this island as we stood close in. When off the north end of Amargura, we saw an island from the masthead, bearing S. E. from us—laid down in the chart as a reef.

The population of Tongataboo is increasing—now about 17,000, including the Hapy group and Vavou.

Wood and water are very scarce, but pigs and yams are to be had in abundance.

63.—NAVIGATION OFF LOWESTOFT.

"*Trinity-House, London*, 1*st August*, 1833.

"Notice is hereby given, that the Stanford Channel being altered, in consequence of the Beacon Shoal having grown up to the south-west, the *White Buoy*, on the south-western extremity of that shoal, has been moved 130 fathoms in that direction. Masters of vessels using that channel should therefore keep the upper light at Lowestoft well open to the westward of the lower light, until the Stanford Light Vessel bears N.E. ¼ N. and then steer for her as before.

"By Order, "J. HERBERT, Secretary."

TIDE-TABLE FOR SEPTEMBER, 1833.

Mean Time.

Week D.	Month D.	PLYMOUTH *Dock Yard.*				PORTSMH. *Dock Yard.*				SHEERNESS *Dock Yard*				LONDON *Bridge.*				ABERDEEN.				LEITH.				Month D.	D's Age at Noon
		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.			
		h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h	m.	h.	m.	h.	m.	h.	m.	h.	m.		
S.	1	6	35	6	50	0	26	0	42	1	39	1	55	3	31	3	46	2	5	2	19	3	40	3	54	1	16·9
M.	2	7	5	7	19	0	59	1	15	2	10	2	24	4	0	4	15	2	33	2	47	4	8	4	22	2	17·9
Tu.	3	7	33	7	48	1	30	1	45	2	39	2	54	4	30	4	45	3	2	3	18	4	37	4	53	3	18·9
W.	4	8	3	8	19	2	1	2	18	3	11	3	29	4	59	5	13	3	33	3	50	5	8	5	25	4	19·9
Th.	5	8	36	8	54	2	36	2	56	3	48	4	7	5	29	5	42	4	10	4	31	5	45	6	6	5	20·9
F.	6	9	15	9	37	3	18	3	40	4	28	4	51	5	57	6	13	4	55	5	21	6	30	6	56	6	21·9
Sat.	7	10	1	10	32	4	5	4	33	5	14	5	42	6	31	6	52	5	51	6	26	7	26	8	1	7	LQ
S.	8	11	7	11	50	5	6	5	45	6	18	6	56	7	16	7	49	7	5	7	50	8	40	9	25	8	23·9
M.	9	....		0	44	6	30	7	16	7	42	8	29	8	36	9	23	8	37	9	20	10	12	10	55	9	24·9
Tu.	10	1	30	2	13	7	56	8	37	9	19	10	0	10	15	10	57	10	2	10	35	11	37	....		10	25·9
W.	11	2	53	3	30	9	12	9	45	10	36	11	7	11	36	....		11	7	11	35	0	10	0	42	11	26·9
Th.	12	4	1	4	29	10	13	10	39	11	33	11	59	0	16	0	49	....		0	1	1	10	1	36	12	27·9
F.	13	4	54	5	16	11	3	11	24	....		0	23	1	18	1	44	0	24	0	46	1	59	2	21	13	N M
Sat.	14	5	40	6	2	11	46	11	55	0	46	1	8	2	12	2	39	1	8	1	30	2	43	3	5	14	1·1
Su.	15	6	23	6	42	....		0	30	1	27	1	46	2	59	3	19	1	50	2	11	3	25	3	46	15	2·1
M.	16	7	1	7	19	0	49	1	10	2	5	2	24	3	41	4	0	2	30	2	50	4	5	4	25	16	3·1
Tu.	17	7	35	7	53	1	29	1	47	2	42	3	1	4	19	4	40	3	10	3	30	4	45	5	5	17	4·1
W.	18	8	12	8	31	2	8	2	28	3	21	3	43	4	56	5	13	3	50	4	11	5	25	5	46	18	5·1
Th.	19	8	51	9	13	2	51	3	14	4	4	4	26	5	28	5	45	4	32	4	56	6	7	6	31	19	6·1
F.	20	9	36	10	1	3	38	4	4	4	50	5	14	6	4	6	21	5	21	5	49	6	56	7	24	20	FQ
Sat.	21	10	29	11	2	4	33	5	4	5	41	6	14	6	43	7	8	6	21	6	58	7	56	8	33	21	8·1
Su.	22	11	41	....		5	40	6	20	6	47	7	25	7	42	8	24	7	40	8	23	9	15	9	58	22	9·1
M.	23	0	25	1	5	6	59	7	33	8	2	8	43	9	15	10	5	9	5	9	44	10	40	11	19	23	10·1
Tu.	24	1	42	2	16	8	7	8	39	9	22	9	53	10	54	11	33	10	18	10	46	11	53	....		24	11·1
W.	25	2	46	3	15	9	7	9	32	10	22	10	47	....		0	4	11	10	11	32	0	21	0	45	25	12·1
Th.	26	3	41	4	3	9	47	10	15	11	9	11	27	0	34	1	0	11	52	....		1	7	1	27	26	13·1
F.	27	4	22	4	41	10	33	10	51	11	45	....		1	21	1	40	0	9	0	26	1	44	2	1	27	14·1
Sat.	28	4	58	5	15	11	7	11	23	0	4	0	22	1	59	2	15	0	42	0	57	2	17	2	32	28	Ful
S.	29	5	33	5	50	11	40	11	56	0	39	0	56	2	35	2	48	1	11	1	26	2	46	3	1	29	16·1
M.	30	6	7	6	24	....		0	13	1	13	1	27	3	2	3	15	1	40	1	54	3	15	3	29	30	17.1

The times of high-water, nearly, at other places on the coast, may be found with the assistance of the above table within certain limits. Thus, the times in the Plymouth-Dock column are to be used for all places between the Land's End and Lyme Cob; and those in the Portsmouth column, for all places between Portland Bill and Beachy Head; by adding or subtracting the time opposite each place, according to the sign + or −.

The times of high-water at Plymouth Dock-Yard are to be used with the difference against the following places, to find the time of high-water there on the same day:—

	h. m.		h. m.
Mounts Bay and Lizard	− 1 3	Eddystone	− 0 18
Falmouth Harbour	− 0 18	Dartmouth and Torbay	+ 0 27
Fowey Harbour	− 0 18	Exmouth	+ 0 52
Cawsand Bay	− 0 10	Lyme Cob	+ 0 27

The times of high-water at Portsmouth Dock-Yard are to be used as above, for the following places:—

	h. m.		h. m.
Portland Bill	− 6 10	Cowes	− 0 55
Weymouth Harbour	− 5 10	Southampton	− 1 0
Christchurch and Poole Harbours	− 2 50	Bembridge Point	− 0 40
Needles Point	− 1 55	Selsea and Arundel Harbours	+ 0 5
Hurst Chamber	− 1 40	Shoreham Harbour	− 0 25
Lymington	− 1 25	Beachy Head	− 1 25

"There is a charge for maintaining the child and its nurse for eight days at the Three Swans, and then for its burial in St. Olave's, Hart-street, and also the surgeon's charges that attended it.

"Large and small portraits of the woman were made for the Queen and the Company; the Queen's were sent to Hampton Court.

"Amongst sundry payments are paid for strong water and a glass, and a 'platte and other stuffe' for parting gold and silver.

"The third voyage was undertaken upon a much larger scale, consisting of the ships Ayde, Michael, Gabriel, and Judith, belonging to the Company, together with nine other ships hired for the voyage; the men were hired for six months from May, but the exact time of their sailing and return doth not appear. A large number of miners and mining implements were taken out, and arrangements were made for Captain Edward Fenton, with one hundred men, to establish a fort at Meta Incognita.

"The ships brought home from this voyage 1,296 tons of ore, which were deposited at Dartford; and considerable works seem to have been carried on there in smelting and refining the ore with some success, unless indeed by the quantity of lead and other additaments, which seem to have been purchased to assist the smelting, the metals were first added to the ore. At this period some disputes seem to have arisen in the Company, and an investigation into the state of the adventure having been instituted, Thomas Neale and William Baynham were appointed, by letters dated 12th August, 1580, and 6th May, 1581, to audit the accounts, who made a full report of the whole receipts and expenditure of the Company, with their debts and the stock and effects remaining. This report recapitulates the names of all the subscribers both for the three voyages and the buildings at Dartford; and the subscriptions of the three several voyages amounted to £20,345, of which the Queen advanced £4,000.

"By this account it appears that the smelting was carried on by John Baptisto Agnello, Jonas Shutz, Doctor Burcotcranik, Robert Denam, and William Humfrey. Amongst the property of the Company is mentioned that Thomas Allen received of Captain Frobisher 2 ingots of fine gold, weighing 9 pennyweights and 8 grains, and 2 ingots of fine silver, weighing 7 ounces 18 pennyweights, which said gold and silver proceeded of the melting and working of 4 cwt. of the 'ewar' brought from Meta Incognita in the second voyage, by the workmanship of Jonas Shutz, in a furnace 'bylded at the Tower Hill, being the first great proof and tryall made by the said Jonas Shutz of the said ewar of Meta Incognita.'

"Again—'Received for certain peces of fyne silver, weighing all 119 oz. and 12 pennyweights, valued at 5s. the ounce, and a part at 5s. 1d. the ounce, and $\overset{\text{xx}}{\text{iiij}}$ grains of fine gold, valued at 10s. of money, which gold proceeded of 14 oz. 3 grs. of the said silver, being parted, all which said gold and silver proceeded from 23 cwt. of lead being refyned, which lead proceeded of a small portion of the 16 tonnes of ewar of Meta Incognita and other mineral ewar, therewith molten, refined, and wrought by Jonas Shutz, at Dartford.'

"'That William Burrow is accountable for 23 cwt. of lead.

"'That of the foresaid workes done at Dartford, by the said Jonas, in the melting and refining the said 16 tonnes of ewar of Meta Incognita and other minerals, there was remaining 8 —— of lead, which afterwards was refined by Robert Denam, whereof proceeded 210 ounces of fine silver mixed with gold, which was delivered to Richard Young, and also 7 cwt. of wrought copper; and also of one other ton of the said ewar of Meta Incognita, which was molten and Refined by R. Denam, at Dartford, there proceeded 24 ounces of fyne silver mixt with gold.'

"Amongst the assets of the Company, is stated to be at Dartford 1,300 tons of the ore remaining, valued at £13. 6s. 8d. per ton, £17,333. 6s. 8d.

"No further information can be collected respecting this ore; but it is to be presumed it did not turn out so valuable, because it is immediately after said that 'much of the same like ewar may be obtained for £6. a ton, whereas this cost the Company £16.'

"Captain Frobisher is charged with having taken out four ships without the knowledge of the Company, on his own venture, but at much cost to them, and that he brought home two of them laden with ore, which was bestowed in the Queen's house at Dartford, 'which was to be considered of according to equity.' There are many questions on particular items in Captain Frobisher's charges, to which he has made marginal observations, appearing to be in his own handwriting.

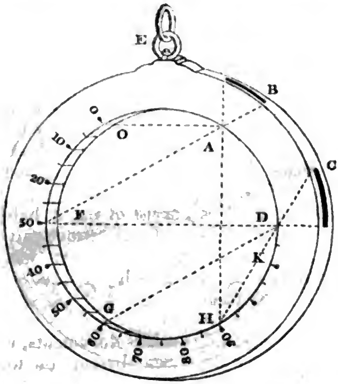
"The accounts themselves consist of about half-a-dozen quires of foolscap paper, out of which a short abstract only has been given of what appears most interesting, although the whole accounts, as illustrative of fitting out a naval expedition in the sixteenth century, seem well worthy of attention."

In addition to the foregoing curious documents, we have selected from an old work entitled the "Sea Mirrour" the following account of a sea-ring, and it is not improbable that the "ringe of Brasse named the Annulus Astronomicus" in the list of instruments may have been something similar. The invention is very simple and ingenious, and is a good specimen of the various contrivances which were resorted to by the old navigators to measure the sun's altitude:—

"*The* 26 *Point concerning the use of the sea-ring.*

"The Astrolabiums which men now-a-dayes commonly use at sea, I meane that with a Dioptra, upon which stand two penullen, and are not very serviceable by reason of the continuall motions of the ships to bee used at sea, unlesse the penullen upon the Dioptra are placed neere by one another, for then the ship-mastres sometimes use the Astrolabium in the measuring of the sunne. Neverthelesse the Astrolabium can have no such perfection in it, for the penullen in the said Astrolabiums are placed almost two or three inches at most the one from the other; and if so bee, in a little time a small fault or mistake happen in the observation of the shaddows, even as through motion of the shipp it may easily happen, soo also must the Dioptra upon the degrees of the Limbus make a greater mistake and fault. Therefore have I here set downe this figured and drawne Ring, which you may let be made ready or prepared by Messig about one foote or a foote and halfe wide, and two or three inches broad. For, in the use of it you have no neede of a Dioptra, but you let the sunne shine through the little holes, because the shaddow may the more perfectly and narrowly bee observed so; then let the ring bee covered on both sides, onely that there may bee some opening left that so the degrees which stand marked on the inside may bee fitly seene and used.

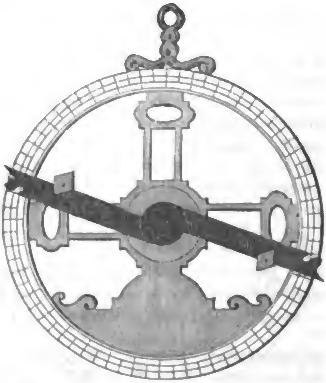
"These degrees fall once more wider one from the other then in the Limbus of the Astrolabium, because in this the shadow falleth out of the circumference, or out of the sides, and not (as it is in the Astrolabium) out of the center, and therefore is the whole circumference of the ring, according to the art of geometry, divided into 180 degrees; whereas, on the contrary, in the Astrolabium the Limbus, or round ring encompassing it, containeth 360 degrees.



"The beginning of the degrees beginneth by the letter O, right even against the little hole over that which is placed next by the handel: these are two little holes or chinkes made in the ring through which you let the shaddow fall, the one stands by the letter B, placed about 10 degrees from the pendel E, by which the ring is hung. The other little hole, C, stands just 30 degrees distant from the little hole B; because, when the sunne is not verry high above the horison then we receive the shaddow through the little hole C, and then wee begin to count the degrees not farre from the letter O, as before said, but from the letter F, standing right just over against C, just 30 degrees distant from O.

"This ring being thus made, I should thinke it most fitting to signify the height of the sunne, notwithstanding the ship-mastres now-a-dayes use the degree-bow, which, neverthelesse, are greatly subject to faults and mistakes."

We have preserved the orthography, that the description of the instrument may be unique with its representation. It will be seen in the foregoing instrument, that the angle of the sun's altitude being measured on, and subtended at the circumference, the whole of this was divided into 180°, differing from the Astrolabe, the circumference of which was divided into 360°, the angle being subtended at the centre. In the "Arcano del Mare," a work published in Florence by the celebrated Earl Dudley, Duke of Northumberland, in 1661, there are as many as 15 different sorts of Astrolabes. In its primitive form it was an instrument as simple in application as the sea-ring, but in the course of time it gradually obtained numerous additions, and became the most complicated instrument used by the old navigators. We have copied the following representation of an instrument of this description from the abovementioned work.



The dioptra alluded to in the description of the astrolabe is evident in the figure; the extremities of it serving as hands or pointers to shew the altitude on the circumference. The penullen are the two little vanes on it, from the upper of which the ray of the sun being admitted through a small hole, falls on the other, thus making the dioptra indicate the altitude.

VI.—HARBOUR OF DUBLIN, AND SHIP CANAL.

To the Editor of the Nautical Magazine.

SIR—As the newspapers have announced that the House of Commons has appointed a Committee to investigate the subject of the ship canal from Dublin to Kingstown, it has occurred to me that the following extracts from a pamphlet which has been in circulation for some months might be agreeable to you, and your readers. B.

The Ballast Corporation, to whom the improvement and the conservation of the Port of Dublin is confided, comprises among its members gentlemen of the highest character and respectability in Dublin; but it is objected to them, as the medium of very extensive professional and scientific powers, that there is not among them a person of professional or scientific habits or knowledge, and that the officers on whom they necessarily rely for information and government, are nearly as uninformed, if not more so, than themselves.

It is alleged that the Clontarf Wall, which the board constructed at an expense of upwards of £100,000, to dislocate the bar, has created within the mouth of the river, a shoal that threatens to be more injurious to the navigation of the port even than the bar itself; which, although probably abated in amount of danger, is still highly injurious to intercourse.

That the operation of dredging, for the purpose of creating a new channel for the current of the river, has occasioned numerous holes highly dangerous to the navigation; several instances having occurred of vessels grounding on the banks in process of cutting, and falling into these excavations on the ebbing of the tide, their bows or sterns sometimes resting on the banks in two or three feet water, while the other ends were plunged into 12 to 17 feet water.

That the banks of the river along the quays are foul and uneven, and that the remnants of the piles used several years since in forming coffer-dams for the custom-house docks, &c., have been suffered to remain, after the destruction of two or more vessels on them.

The justly celebrated Mr. Rennie, in his report to the directors-general of inland navigation, 26th July, 1802, after alluding to the trivial advantage that had resulted from the labours of the ballast corporation, by an expenditure of £200,000, observes, that "he could not entertain any very sanguine hopes of much good being produced by any works which can be added to it, at a moderate expense;" and adds, "The very great expense which any considerable improvement in the present harbour of Dublin will cost,

(£655,872, according to his estimate,) with the small advantage which, comparatively speaking, will be derived from it, has induced me (as others who have preceded me have done) to consider whether any more eligible and more effectual plan can be devised, at a less expense, for the improvement of the harbour of Dublin, than what is above described;" and he accordingly recommended the construction of a ship canal, from the deep water at Dunleary to the river Liffey, the expense of which (deducting the cost of two sea basins at Dunleary, now rendered unnecessary by the Kingstown harbour) he estimated at £232,524.

Mr. Jessop, an engineer of considerable eminence, in a report to the directors of the Grand Canal Company, dated 29th April, 1800, recommended, in forcible terms, the construction of a ship canal, which vessels of 12 feet draught might navigate at low water, and vessels drawing 20 to 24 feet might enter at high water; and the expense of this work (deducting, as above, the basins which the asylum harbour has rendered unnecessary) he estimates at about £180,500: but assuming it, without the above deductions, at £405,439, he says, "Great as this expense may be considered, I trust, that when its object is truly appreciated, it will vanish in the comparison. Without such an improvement, the port of Dublin never can participate in the benefits which are now enjoyed by the commercial towns of England. *It is not within the power of man to obtain it by the improvement of the present channel, if ten times the sum were to be allotted to it.*"

Sir T. Page, of the Royal Engineers, was, in 1800, sent to Ireland, to survey the bay and harbour of Dublin, with a view to their improvement; and, in an official letter to Colonel Littlehales, dated 7th Sept. of that year, he observes, that a ship canal, from the deep water on the south side of the bay, communicating with floating docks at Dublin, would certainly increase the commerce of the port, "*and make Dublin one of the best sea-ports in the empire, and be the most certain means of extending the commerce of Ireland.*"

The late Mr. Killaly, in a letter dated the 5th December, 1826, declared that a careful and mature examination of the practicability and usefulness of the proposed ship canal, from a floating dock in the city to the Royal Harbour at Kingstown, had induced a firm conviction, that if that work "is carried into effect, Dublin, which has hitherto enjoyed so small a portion of the lucrative trade of the empire, owing to the imperfect state of her harbour, and the channel to her quays, will rise in consequence and in wealth, to a station that will fairly entitle her to the rank, as well as the name, of the second city in the United Kingdom."

Mr. Killaly continues to say, "I cannot avoid observing, in conclusion, that much, and justly, as the Royal Harbour at Kingstown is prized, as a work worthy of British genius and enterprise, its benefit to the trade of Dublin must always be of a limited nature, so long as vessels frequenting this port have to encounter the risk of crossing the bar, and the very imperfect navigation of the river."

The late Messrs. Vavasour, Nimmo, and others, have likewise borne evidence of the expediency of a ship canal. The sites and directions of most of them varied according to the views of the engineers, or the interest of the parties by whom they were employed. The government should, undoubtedly, take care that any project to be hereafter adopted, shall be considered independently of local or personal interests, and shall be regulated solely by public convenience and expediency. A canal, 100 feet wide at bottom, 200 feet at surface, and 20 feet deep, can, according to recent estimates, be completed for a sum under £200,000: to meet this expenditure, without any increase of burthen to the public, it is proposed to borrow a sum competent to the purpose, and to make a portion of the tonnage and quayage duties of Dublin, now employed in profitless speculations for the improvement of the river, applicable to the payment of the interest, together with a sinking fund for the repayment of the principal, which, without inconvenience, may be effected within ten or twelve years, when the trade of the port may be relieved from the heavy pressure of those taxes.

A railway cannot be rendered available to the purposes or the interests of commerce, although it may offer, in its extended scale, much impediment to the progress of a canal; neither can the piers of the harbour of Kingstown be adapted to the loading or unloading of vessels along their sides, at an expense under the sum requisite for the completion of a ship canal—Mr. Whidbey, who was sent by government to ascertain the fact, having reported, in a letter dated Plymouth, 3d September, 1823, to George Harrison, Esq., of the Treasury, that the required facing of the piers would cost £199,838.

VII.—The Sandwich Islands.

A considerable time has elapsed since we have had in our possession a letter on the Sandwich and Bonin Islands, addressed by Mr. Horton James to a noble Lord. We have deferred noticing it hitherto from want of space, but the present seems so fair an opportunity for following up one of its principal features, the Missionary establishments, that we can no longer neglect it.

Roaming at large about the world, as the writer of this letter has done, and alive to the interests of his country, besides deploring misrule and mismanagement wherever he sees it, he has very naturally pointed out the means of remedying it, where they appear to him to be feasible. With this tone of feeling, it might be expected that he would endeavour to call the attention of men in power to the condition of the Sandwich Islands; for, by his account, there is enough to set right there. The first object of Mr. James is to render this valuable group of islands, as soon as possible, "*substantially* a British possession." It is rather startling to read the following extract, the first paragraph of Mr. James's letter, but we have no reason to doubt it:—"Ever since our illustrious countryman (53 years ago) completed this last and noblest of his discoveries, the Sandwich Islands have been gradually retrograding in happiness, population, and productions; and from 400,000 fine athletic people in Cook's time, they have now dwindled down to about 75,000 souls, hardly able to obtain food, and groaning under a Missionary tyranny of American enthusiasts, worse even than that of Dr. Francia, in Paraguay." But when we find, in page 11, that Madame Boki, the Queen! of the Sandwich Islands, "may be seen in almost a state of nudity, every day, in her straw hovel in Woahoo, beastly drunk; a quart or bottle of strong raw rum, in the course of the morning, being nothing to her;" and consider the state of the islands with respect to its Missionary establishments, our surprise at once ceases. We will give our readers the rest of Mr. James's report of Madame Boki: "And this *lady*, (the only one of the lot that has survived the visit to Europe,) from her intemperate habits, cannot be expected to live long. If then this woman, who, it must be admitted, is the highest person by birth, manners, dress, &c., among the native chiefs of all the Islands, notwithstanding the good example which she has had of a better state of things, during her temporary residence in the Adelphi, is so bad and abandoned, what can be supposed of the others, who have not had such advantages? The demi-civilized chiefs of the Islands, I have no hesitation in saying, are infinitely worse than any savages I have ever seen in all the Pacific Ocean; and it is mortifying to an Englishman's feelings, that he should not consider himself on his *own* soil, when he is treading those Islands, so dearly purchased by the blood of the greatest navigator that ever lived." Such a state of things is certainly enough to try the patience of any Christian, and we marvel not at Mr. James feeling as he does.

The following paragraph lets us at once into the actual state of things concerning these Islands:—

> "The Russians attempted, some 8 or 10 years ago, to make a settlement in the Sandwich Islands, seeing how convenient they would be to keep up a communication with their numerous and wealthy settlements on the N.W. coast of America; and a vessel of war, belonging to the Czar, landed her guns in the port of Anaré, on the north side of the Island of Atooai, and built a very commanding fort, which still exists, though the settlement was soon abandoned, in consequence of a hint from the court of St. Petersburg, that it

would be displeasing to Great Britain. The Americans also, though not fond of foreign dependencies, and not a colonizing people, would be very glad if they could avail themselves of such a central situation as those Islands offer, for the more easy carrying on their increasing trade with China, and as a permanent resort to their hundreds of spermaceti whalers, but they also refrain from interfering with the prior rights of Great Britain; and so, what with the apathy of the English; the fear of giving offence on the part of the Russians, and the generous avowal of the Washington Government, that they cannot set up any claim to the Sandwich Islands; those beautiful and invaluable places are rapidly going to ruin, at present prostrate at the feet of an ignorant and fanatical hierarchy of Mechanic Missionaries from America, who interfere with every thing concerning the trade and resources of the Islands, as well as its internal government, and connexion with vessels putting in for repairs and refreshment, after foreign voyages, to the great loss and embarrassment of the owners and captains.

"The daily depopulation of the Islands, owing to the existing tyranny, will, it is to be feared, leave, in a few years, the country without inhabitants. But surely it is better that an English system should be introduced, and tillage commenced, while there are yet a few thousands of the natives left for the purpose, strong and willing to work, than that we should wait until the Islands are a desert, and then have to import the natives of other countries to do the labour."

To remedy this state of things, Mr. James proposes, that a company should be formed, with the authority of the legislature in England, and alludes to precedents enough in grants of portions of the United States to English companies, before their separation from Great Britain. By the establishment of a colony on the Sandwich Islands, Mr. James is of opinion, and we quite agree with him, that these islands, would be sources of prosperity to England, their situation being the best possible for a general trade throughout the Pacific Ocean, and, as he observes, in the very centre of the sperm whale fishery. Mr. James does not confine himself to these islands alone; he points to the Bonin Islands, as likely to enjoy, from the proximity to the coast of China, all the benefits of a trade with that country, besides "various other places on the globe, now wasting to decay, wanting nothing but the hand of man to create in all of them a prodigious wealth." Mr. James is a man of experience, and we have a proof of the sincerity with which he writes, by his being now on his way to the Bonin Islands, with a small establishment, and we are by no means inclined to doubt the justness of his views. One thing, however, should be done at a time; and we think that if the settlement of the Sandwich Islands were once effected, all the rest would follow shortly after, for the Bonin Islands are but a fortnight's sail from them.

Let us now look further into the present condition of the Sandwich Islands. Mr. James tells us, and he has not left these Islands longer than a year or two, that—

"The only white inhabitants on the Islands are first the Connecticut Missionaries, of whom, and their ultimate views to dominion there, I shall say nothing in this place; next, a few American gentlemen, owners of vessels, who, liking the climate, have built themselves houses; and a few English gentlemen, and about 200 to 300 artisans, English and American. These all, to a man, desire most strongly, that the English government would send a governor there, aud promote the settlement of the country; perhaps, of the two, the Americans were most loud in their entreaties to me that I would make known their wishes in this respect, as soon as I arrived in London. The Missionaries, their families, and servants, are the most numerous class, and are living in a rich profusion of all the elegancies and comforts of life, supplied by their willing and simple contributors in the eastern states of America, by cargoes at a time. These men are desirous of no change, but wish to have the Islands all to themselves.

"The black natives are most anxious to be taken from the oppression of their chiefs; and indeed it would be an act of the noblest benevolence, that the British government should step in, and destroy the overbearing tyranny now exercised towards the labouring classes of the Sandwich Islands, by their black chiefs and the American Missionaries."

Now, that some change is become actually necessary in these islands, we have here abundant proof; and we cannot help thinking, that by following the examples of our ancestors in the formation of a company, this change might be effected without putting the government to any expense, and requiring only its approbation. Such schemes want only the plans of talented and experienced men, to set their advantages forth in their true colours; and capitalists will quickly come forward with the means of carrying those plans into execution, provided they be sound and honest. We certainly think, that the settlement of the Sandwich Islands would afford a most advantageous opportunity of this kind: in point of humanity alone, to the present natives it is desirable; and in point of right to them, no one disputes their belonging to England.

But there are other considerations, of which we are reminded by the following extract from the letter before us. Mr. James says further—

"One word in conclusion, as to the Sandwich Islands. If the British government should still refuse to colonize them, or to grant them, which perhaps would be the cheapest manner of the two; if, I say, they should still persist in refusing to do either, it is at least to be hoped, that the beach at Karakakooa Bay, the most sacred and classical spot in the wide and vast Pacific, will not be allowed to remain in its present degraded state, without a memorial or monument to the great man, to whose intrepid and insatiable devotedness to nautical discovery we are indebted for the knowledge of these Islands.

"While the captain and officers of a French corvette, not many months ago, as well as the officers of an armed ship of his Prussian majesty, on her way to China, all went ashore in succession in this celebrated bay, prostrating themselves on the Black Lava Rock, and actually *kissed* the spot, hallowed by the massacre of Captain Cook, and for ever identified with his imperishable name; we, his countrymen, are satisfied with a cold and silent approbation, and have allowed the place to remain for 53 years without any thing more than a rude heap of loose volcanic stones, about 4 feet high, to mark the memorable scene of his sudden and savage murder.

> "If the French government sent out a corvette in 1826 for the purpose of affixing a tablet of brass on the south head of Botany Bay, marking the spot of earth last touched by La Perouse in 1788, surely we ought to do as much for a still greater man, our countryman, and on the spot of his ever-to-be-regretted loss."

There are periods in the history of nations, in which political events engross the entire attention of those men to whom is assigned the arduous duty of governing their affairs—it cannot be otherwise; but at the same time there is much for contemplation in the passages we have last quoted; and however unfavourable the present time may be on this account for such considerations, it may be observed, that we are in the midst of a profound peace, when such noble designs can best be matured and completed. The best monument that could be raised to immortalize the memory of our illustrious countryman, would be a firmly established colony of his fellow-people, who, by their industry and talents, would convert the place of his assassination into a busy and active scene of commercial intercourse, to the advantage of the surrounding inhabitants of the globe, to their own prosperity, and to the honour and renown of their country.

We must yet follow Mr. James into the Missionary establishments at the Sandwich Islands. It is with no spirit of bad feeling that we do so: but to assist in pointing out a subject for inquiry in the existing abuses of an unfortunate race of people, that have a right to look to us for protection, we hold to be of far higher consideration than the benefit of a few individuals at their expense. The following is the picture drawn of the work of the American Missionaries at the Sandwich Islands, and a sad one it is:—

> "It is extremely painful to be obliged to say so much against the American Missionary system, as I found it existing in these highly-favoured Islands. Whilst travelling in Europe, I had always been friendly to the cause, and had been also no mean contributor to Missionaries generally to the South Sea, and therefore visited the various groups of Islands quite prepossessed in favour of them; but truth compels me to say, that the personal observation, *upon the spot*, of the effects produced by the conduct of the American Missionaries in the Sandwich Islands, wrought on me a sad and melancholy disappointment.
>
> "No doubt, among so numerous a body as the American Missionaries, there are many very valuable men, who would do honour to any employment they might be engaged in, and among these I have great pleasure in recollecting Mr. ——— in Owhyhee, but 'exceptio probat regulam;' and it is to be regretted such instances are not more numerous. The system of exacting a Spanish silver dollar from every black man and woman before the Missionary will marry them, is certainly not one of their instructions, and is highly oppressive among a population that can hardly obtain a dollar by any exertions, coupled, as this priestly regulation is, by a summary denouncement against all those who cohabit together without the form of marriage. A sermon, which I heard in the Island of Woahoo, was frightful; it was something in these words, 'You will go to the horrible place of torment in everlasting flames, unless you rely solely on our Lord Jesus Christ. It is no use your

being honest, no use your being sober, feeding the hungry, and healing the sick, and leading what the world call a virtuous and upright life one towards another; all this I say is of no use; you and your children will be cast into the fiery pit, which burneth for ever and ever, the bottom of which is paved with the little bones of infants not a span long!' I would ask any body, if this is the way to begin with people in a complete state of nature. The preacher was a young man of about twenty, that had just arrived from the establishment at Princeton, in New Jersey: but it is to be hoped that he will follow in the path so abundantly set before him by his elder brethren, and end with the same amount of discretion as he has now of zeal, and thereby accumulate, as I was informed the head Missionary, but ci-devant chair-maker, has done, twenty thousand dollars worth of property in his house at Honoruru!

"No wonder the population is gradually falling off, when, added to this system of frightening the people, and charging them a dollar for getting married, they are compelled to attend to church and school four days out of the seven, and the fifth day is spent in compulsory labour for the chiefs; thus leaving only two whole days for the purpose of tillage and growing their necessary food.

"The Missionaries have prohibited Fishing, Bathing, Jews' Harps, and the Surf Board, and every other description of amusement among the native population; besides which, they have introduced an old law of the Connecticut puritans, and will not allow an English or American gentleman to ride on horseback on Sundays, or drink spirituous liquors, or play at bowls or billiards on any day in the week; whilst they themselves are driven about the town, and about the country, four-in-hand, with their wives and families, Sundays and working days, not by horses, which are plentiful and cheap enough in those Islands, but by human beings, by four naked black fellows, their own hearers, and probably fellow communicants!"

Mr. James continues—

"The Missionaries wanted to proclaim the ten commandments of Moses as the supreme law of the land throughout the Islands, but some difficulties were started, and the plan was abandoned.

"In short, civilization, as it is unfortunately going on at present in the Sandwich Islands, under the mismanagement of the American Missionaries, is only another word for *extinction*.

"The bulk of the people are in a state bordering on starvation, because the adults are taken away from their enclosures of taro and potatoes, to learn to read and spell; thus beginning at the wrong end, and the time that should be devoted to the agricultural and mechanic arts, is now frequently wasted in teaching old men of seventy to spell a-b ab! and where one naturally looks for the outward signs of industry, the spade, the hoe, the fishing-net, &c., there is nothing but a vain and idle exhibition of the *palapala*, or spelling-book, bought of the Missionaries at a high price.

"In fact, the whole system, wtth an honourable exception or two, is nothing but a money-making fraud, and instead of tending to the benefit of the wretched people, may be considered almost as a visitation of wrath, and a direct cause of the depopulation before spoken of.

"First, by a tax on marriage, much above the means of nine-tenths of the people; which tax is not received by the king or government, such as it is, to be disbursed and circulated again, but goes directly into the pockets of the Missionaries, to be hoarded by them, and taken out of the country when they have sufficiently feathered their nests; and by denouncing eternal torments on those who marry according to the ancient usages, that is, without paying a dollar to the reverend fathers.

"Second, by starvation; employing the natives four hours out of the seven in useless school learning, or otherwise taking them from the cultivation of the soil.

"Third, by disease; prohibiting bathing, which, in that climate, is almost as essential to existence as fresh air: the natives, from being the fine healthy people they were in Cook's time, are now covered with vermin and scorbutic eruptions.

"Fourth, by prohibiting their innocent sports, and by fruitlessly attempting to bind human beings to a mode of life which is contrary to their nature, their spirit is broken, and they have now become listless and enervated; and, should the present system continue, there will ere long be none but the white population for the Missionaries to preach to."

All this should be remedied; but we repeat, that we have taken up this subject in no spirit of malevolence, and with the pure feeling only that such a state of things is well worthy the attention of our philanthropists, if not of the legislature.

LITERARY AND SCIENTIFIC NOTICES.

BOOKS.

The Nautical Almanac, and Astronomical Ephemeries for the year 1834. Published by order of the Lords Commissioners of the Admiralty. London. Murray. 1833.

This national and truly valuable work is at length before the world; and, although some inconvenience may have been occasioned by its tardy appearance, (a circumstance, by the way, that is by no means to be attributed to the superintendent,) if we mistake not, it will amply fulfil the most sanguine expectations yet formed of it. In our sixth number, for August last, we copied the report of the learned committee appointed by the Royal Astronomical Society for the purpose of improving the Nautical Almanac; which report formed the foundation, in all its particulars, of the work before us. A glance over the names of the persons who formed that committee was a sufficient guarantee to the country at large that the momentous duty entrusted to them would be well executed; that, if their suggestions were attended to, a work would be produced as perfect as it could be made in the present day; for, in that list we see names of individuals well skilled in the present advanced state of Astronomical knowledge, in conjunction with others celebrated for the first nautical experience of a scientific cast: thus combining a mass of talent which was not likely to disappoint the expectations of either the *astronomer* or the *navigator*. The pursuits of the former do not fall exactly within our sphere, but of the latter we may say a word or two in allusion to the work before us.

Before we proceed to do this, we will lay before our readers an extract from the preface, which has been drawn up and introduced, with much good judgment, by Lieut. Stratford. As it relates to the whole history of the work, it will afford our readers rather an amusing contrast between the state of navigation at the period when it was first published, and that of the present day:

"The Nautical Almanac owes its existence to a memorial presented to the Commissioners of Longitude, on February 9, 1765, by Dr. Maskelyne; in which, after stating many facts and experiments to prove the utility of the lunar method of obtaining the longitude at sea, he concludes, 'I flatter myself, that the facts and experiments here recited will appear sufficiently vouched to you from the certificates and testimonies of the gentlemen who have made these trials; and I am authorized by them to say, that they apprehend that nothing is wanting to make this method generally practicable at sea but a Nautical Ephemeris; an assistance which they, with many more, hope for from this board.' The memorial is given at length in '*New and Correct Tables of the Motions of the Sun and Moon.* By Tobias Mayer. *To which is added, the Method of finding the Longitude improved.* By the same author. Published by order of the Commissioners of Longitude. London, 1770.' page cxvii.

"The following proceedings, consequent upon this memorial, are extracted from the same work:—'At a meeting of the commissioners appointed by Acts of Parliament for the Discovery of the Longitude at Sea, &c., which was held at the Admiralty, on Saturday, the 9th of February, 1765,

"'A memorial from the Rev. Mr. Nevil Maskelyne was read, setting forth to the effect following, viz. [*Here the substance of the memorial recited.*]

"'The following persons, who were attending by Mr. Maskelyne's desire, viz.:

Mr. James Lauder, Chief Mate of the Egmont,
Mr. James Stephens, late Sixth of the Speaker,
Mr. Robert Scott, Third Mate of the Speaker,
Mr. John Horsely, Fourth Mate of the Glatton,
East India Ships,

were then, at his request, called in separately, and examined as to the utility and practicability of the above-mentioned observations: they produced their journals, and some abstracts of the results of their observations, and all agreed in testifying that they had determined the longitude of their respective ships, from time to time, by observations of the moon, taken in manner directed by the aforesaid book,* and found the said observations easily and exactly to be made; and that the longitude resulting always agreed with the making of land (near the time of making the observations) to 1°; that they could make the calculations in a few hours, not exceeding four hours; and are of opinion, that if a Nautical Ephemeris were published, this method might be easily and generally practised by seamen. They then withdrew. The board having taken the matter into consideration, came thereupon to the following resolution, viz.—Resolved, That it is the opinion of this board, upon the evidence given of the utility of the late Professor Mayer's Lunar Tables, that it is proper the said tables should be printed; and that application should be made to Parliament for power to give a sum, not exceeding £5000, to the widow of the said Professor, as a reward for the said tables, part of which have been communicated by her since her husband's decease; and, also, for power to give a reward to persons to compile a Nautical Ephemeris, and for authority to print the same, when compiled, in order to make the said lunar tables of general utility.'

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* [*The British Mariner's Guide to the Discovery of the Longitude at Sea and Land within a Degree, by Observations of the Distance of the Moon from the Sun and Stars, taken with* HADLEY'S *Quadrant.* By Dr. MASKELYNE.—S.]

"In pursuance of this resolution, Mayer's widow received a reward of £3000; and the celebrated Euler the sum of £300, for having furnished the theorems made use of by Mayer in his theory; and the construction of a Nautical Ephemeris was intrusted to Dr. Maskelyne.

"The first Ephemeris, viz. that for 1767, was published in 1766, since which time the work has been continued annually."

Mr. Stratford enumerates the various changes which it successively underwent, and the tables on which they were introduced down to the present time. Such was the origin and progress of the Nautical Almanac.

Let us now take a glance at that before us. The first feature which presents itself is the bulk of the work: but let us assure the seaman, that this increase of size not only affords him more material, but that same material more conveniently arranged for his purpose, and he will then gladly put up with it. For instance, the very first thing that presents itself is the sun's right ascension and declination. For these we have the difference, or change, in each quantity for one hour; thus enabling the navigator to reduce them for his meridian by a shorter process than before. But the principal advantage of this description which the navigator obtains with this new work will be found in the moon's right ascension and declination, which are given for every hour of the day! with a decimal difference for 10 minutes' change. Such an advantage is of no ordinary kind, when the labour of obtaining them formerly is considered, whereby the chances of error were so much increased.

The next feature which presents itself is the introduction of the distances of the planets from the moon, by which so many more opportunities are afforded to the navigator of obtaining his longitude; and we find in their arrangement with the sun and fixed stars, that Lieut. Stratford has inserted those of the western horizon first, and the rest in succession; thus apprising the navigator which he should first look out for. A complete Ephemeris of the planets is also given, and, for every month, a copious list of moon-culminating stars, which, with the assistance of the transit instrument, affords the astronomer the utmost facility for determining his longitude.

But we will refer our readers to the lucid and concise explanation of these articles, and others too numerous for us to mention, that will be found at the end of the present work. We cannot, however, help expressing our admiration at the distinct and satisfactory manner in which this is conveyed, nor can we hesitate to congratulate the navy in general on the difficult and arduous task of its entire superintendence being so efficiently performed by one of "the cloth." We have only to add, that the new Almanac is more than double the size of the former, and is to be had for the same money.

FACTS and OBSERVATIONS on the Dangers and Difficulties attending the Loss of a SHIP'S RUDDER; together with a Description of an improved Plan of a Temporary Rope Rudder, and for removing the existing Difficulties, and affording Ships the Means, within themselves, of making this Temporary Rope Rudder at Sea. By Thomas Unwin, Boatswain, Royal Navy. Picken, Devonport. 1833.

We will venture to assert, that Mr. Unwin, in the course of his long professional life, has not done a greater service to his countrymen, than in giving them, in this little pamphlet, the method of applying those means which are within their reach, to save their vessels from wreck. Various devices have been contrived, at different times, as substitutes for that important member of a ship, her rudder; and experienced men have of late so constructed it, as to avoid much liability to accident. Such, for instance, is that of Captain Lihou, R.N. Temporary rudders, however, must be resorted to, as long as ships go to sea; and that which is most easily made, and answers the purpose for which it is intended, must be the best; because the time to be devoted to making it, in nine cases out of ten, is of the utmost importance to the safety of the ship. Mr. Unwin has had recourse to his old stores for the construction of his rudder; and, something like the men in the fable, who, when the town was besieged, each recommended their own ware for its protection, he says, with a different motive from theirs, that there is nothing like rope! Now we are inclined to agree with him, although we would avoid, if we could, the spoiling of a new cable for the purpose of making a rudder, unless we could have recourse to nothing else. We will take some future opportunity of describing Mr. Unwin's plan to our readers; in the mean time, no master of a vessel should go to sea without his pamphlet.

CHRONOMETER RATES.—A staff has been fixed on the top of Greenwich Observatory, for the purpose of communicating the mean time at Greenwich to the masters of vessels in the river having chronometers, thereby enabling them to obtain their rates. It is not yet in operation. When it is so, we will give the necessary particulars. It is said to be the proposal of Captain Wauchope, R.N.

NAVAL MONUMENT.—We hope to be able to congratulate the Navy in general, on the adoption of Mr. Bellamy's beautiful design, for a National Naval Monument, which he proposes to be erected on the extensive space at Charing Cross, which will be called Trafalgar Square. A pressure of other matter prevents us from going into its merits; but we wish it all the success which the talent and good taste of the artist claim for it.

PROGRESS OF SHINGLE.—A paper was read at a recent meeting at the Royal Institution, on the progressive motion of shingle beaches along the sea coast by H. R. Palmer, Civil Engineer. It has been ascertained by this gentleman from actual observation, that the general arrangement of the pebbles on a beach are according to their sizes; the largest pebbles being deposited on the upper level, and the rest below them according to their respective dimensions, the least being the lowest. This he found took place with every tide; and the reason, as he explained it, is obvious to any who may have paid the least attention to the subject. As the wave recedes from the beach, its force having been employed in washing the pebbles up, it is to be expected that they should be carried back with the receding water; but the distance to which they are carried depends on the weight of the stone to resist the force exerted on it. Hence the smallest pebbles would be carried back furthest, and Mr. Palmer concludes, from their being struck by the greatest number of breakers, would travel the greatest distance along the coast, that distance always depending on the force and direction of the wind and tide. There are other circumstances besides, which very materially influence this progress of the shingle; such, for example, as a hard smooth land below the high-water level, which would offer no interruption to it in passing.

We are glad to find that Mr. Palmer is turning his attention to improving the entrances of our harbours, which induced him to examine this interesting branch in the operations of nature.

NAUTICAL MISCELLANY.

NAVAL INTELLIGENCE.

The Royal Navy in Commission.

⁂ S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

Actæon, 26—Hon. F. W. Grey, 1st May, at Constantinople.

Ætna, S. V. 6—Com. E. Belcher, surveying the Esquerque shoals.

African, St. V. — Lieutenant J. Harvey, 14th June arrived at Lisbon. 25th June returned to Falmouth—Hamoaze. 15th July sailed for Lisbon.

Alban, St. V. — Lieutenant A. Kennedy, 25th June sailed for Milford.

Alfred, 50—Capt. R. Maunsell, 8th June at Malta.

Algerine, 10—Com. Hon. J. F. F. De Roos, 11th March arrived at Rio, 16th April at Bahia, from Pernambuco.

Alligator, 28—Captain G. R. Lambert, 25th February, left Trincomalee for Madras.

Arachne, 18—Com. W. G. Agar, 26th May, at Barbadoes.

Ariadne, 28—Capt. C. Phillips, 14th May arrived at Port Royal.

Asia, 84—Rear-Adm. Parker, C.B., Capt. P. Richards, Tagus, 4th July.

Astrea, 8—Capt. W. King, Falmouth, superintendent of Foreign Packets.

Athol, *Troop Ship*—Mr. A. Karley, 22d Feb. sailed for Demerara.

Badger, 10—Com. G. F. Stowe, Simon's Bay, 20th Dec.

Barham, 50—Capt. H. Pigot, 8th June at Malta.

Beacon, S. V.—Com. R. Copeland, Archipelago.

Beagle, 10, S. V.—Com. R. Fitz-Roy, South America, surveying.

Belvidera, 42—Capt. Hon. R. S. Dundas, 10th July sailed for Oporto and Mediterranean. Passengers, T. Holloway and J. P. Clapperton, Second Lieuts. R.M., to join the Conway.

Blanche, 46—Capt. A. Farquhar, K. H. C. B. 8th May left Jamaica for Barbadoes. 3d June arrived there.

Brisk, 3—Lieut. J. Thompson, coast of Africa.

Britannia, 120—Vice-Admiral Sir P. Malcolm, Capt. P. Rainier, 8th June arrived at Malta.

Britomart, 10—Lieutenant H. Quin, 28th May arr. at Madeira. 1st June sailed for Africa.

Buffalo, *Store Ship*—Mr. F. W. R. Sadler, *Master*, 12th May sailed for New South Wales.

Caledonia, 120—Captain T. Brown, Hamoaze.

Carron, St. V.—Lieut. Com. J. Duffill; Sheerness Station.

Castor, 36—Capt. Rt. Hon. Lord John Hay, 4th July off the Tagus.

Ceylon, 2.—Lieut. H. Schomberg, Malta.

Challenger, 28—Capt. M. Seymour, Portsmouth, fitting.

Champion, 18—Com. Hon. A. Duncombe, 8th June at Malta.

Charybdis, 3 — Lieut. Com. R. B. Crawford, coast of Africa.

Cockatrice, 6—Lieut. Com. W. L. Rees, Rio Janeiro.

Cockburn, 1—Lt. Com. C. Holbrook, Kingston, Lake Ontario.

Columbia, St. V. 2—Lt. Com. R. Ede, Plymouth.

Columbine, 18—Com. O. Love, 22d May at Halifax, refitting.

Columbine, St. V.—Lieut. R. Ede, 10th July Left Falmouth for Mediterranean.

Comet, St. V.—Mr. T. Allen, Woolwich.

Comus, 18—Com. W. Hamilton, 15th April spoken in lat. 28¼° N. 42½° W.

Confiance, St. V. 2—Lieut. Com. J. W. Waugh, 8th July sailed for Lisbon with despatches.

Conway, 28—Captain H. Eden, 21st June sailed for Vigo. 7th July off Oporto.

Cordelia, 10—Com. C. Hotham, 20th May sailed for Corfu.

Curaçoa, 26—Capt. D. Dunn, 1st Sept. arr. at Manilla from Singapore.

Curlew, 10—Com. H. D. Trotter, 2d May at Fernando Po.

Dee, St. V. 4—Com. R. Oliver, (*b*) 24th June touched at Plymouth on way to Milford. 27th June returned to Plymouth.

Dispatch, 18—Com. G. Daniell, 26th April arr. at Barbadoes from Trinidad; 15th May at St. Thomas's from Tortola.

Donegal, 78—Capt. A. Fanshawe, 17th June arrived at Lisbon. 4th July, Tagus.

Dromedary—R. Skinner, Bermuda.

Dublin, 50—Capt. Rt. Hon. Lord J. Townsend, 18th March at Valparaiso; sailed for Lima.

Echo, St.V.2—Lieut. Com. R. Otway, Oporto.

Endymion, 50—Captain S. Roberts, C.B. Hamoaze, fitting.

Excellent, 58—Capt. T. Hastings, Portsmouth.

Fair Rosamond, *Schooner*—Lieut. Com. G. Rose, 10th July sailed for Africa, *via* Lisbon.

Fairy, S. V. 10—Com. W. Hewett, surveying in the North Sea.

Favorite, 18—Capt. J. Harrison, 2d May at Fernando Po. Expected home in August.

Firebrand—Lt. W. G. Buchanan, Woolwich.

Firefly, 2—Lieutenant J. M'Donnel, Bahamas.

Firefly, St. V.—Lieut. T. Baldock, 27th June arrived at Falmouth. Passenger, Capt. Morgan, R.N.

Flamer, St. V. 6—Lieut. R. Bastard, 10th June arrived at Gibraltar; 11th sailed for Malta.

Fly, 10—Com. P. M'Quhae, 17th April sailed from Havana.

Forte, 44—Capt. W. O. Pell. Hamoaze.

Gannet, 18—Com. J. B. Maxwell, 2d May arr. at Maranham.

Griffon, 3—Lieut. E. Parlby, 2d May, Fernando Po.

Harrier, 18—Com. H. L. S. Vassal, 25th Oct. arr. at Madras from Calcutta.

Hermes, St. V.—Lieut. J. Wright, Woolwich.

Hornet, 6—Lieut. F. R. Coghlan, running between Monte Video and Rio Janeiro.

Hyacinth, 18—Com. F. P. Blackwood, 29th May arrived at Madeira; 2d June sailed for Cape.

Imogene, 18—Capt. P. Blackwood, 1st Feb. arrived at Sydney; 13th sailed; 23d Feb. returned to Sydney.

Investigator, 16, S. V.—Mr. G. Thomas, Shetland Islands, surveying

Isis, 50 — Captain J. Polkinghorne, Cape station.

Jackdaw, S. V.—Lieut. E. Barnett, 7th May at Funchal; 8th sailed for West Indies.

Jupiter, *Troop Ship*—Mr. R. Easto, 28th Feb. arrived at Rio Janeiro; 8th March sailed.

Kangaroo, 3—Lieut. F. Gilley, 8th May left Jamaica for Nassau.

Larne, 18—Com. W. S. Smith, 10th May sailed for West Indies.

Leveret, 10—Lieut. W. F. Lapidge, 7th July off Oporto.

Lightning, St. V.—J. Allen, Woolwich.

Madagascar, 46—Capt. E. Lyons, 20th May at Malta. 22d sailed for Nauplia.

Magicienne, 24—Capt. J. H. Plumridge, 12th Feb. arrived at Calcutta.

Magnificent, 4—Lieut. J. Paget, Port Royal.

Magpie, *Cutter*—Lieut. J. Moffat, Sheerness.

Malabar, 74—Capt. Hon. J. Percy, 8th June at Malta.

Mastiff, 6, S. V.—Lieut. T. Graves, Archipelago.

Melville, 74 — Vice-Admiral Sir John Gore, K.C.B., Capt. H. Hart, 15th Feb. arrived at Colombo. 17th left for Madras.

Messenger, St. Transport—Mr. J. King, Portsmouth station — attending on the Duchess of Kent.

Meteor, St. V.—Lieut. Symons, 30th March at Marseilles.

Minx, 3—Lt. J. Russell, 10th Jan. at Jamaica.

Monkey, — Lieut.———, Feb. at Jamaica.

Nautilus, 10—Com. Rt. Hon. Lord G. Paulett, Oporto.

Nimble, 5—Lieut. J. M. Potbury, Jamaica in March.

Nimrod, 20—Com. Rt.Hon. Lord E. Russell, 21st May arrived at Lisbon; 7th July off Oporto.

North Star, 28—Capt. Lord W. Paget, 24th May left Vera Cruz for Tampico, Havana, and Portsmouth.

Ocean, 80 — Vice-Admiral Sir John Poo Beresford, Bart. K.C.B., Capt. S. Chambers, Sheerness.

Onyx, 10—Lieut. A. B. Howe, Plymouth.

Orestes, 18—Com. W. N. Glascock, Oporto.

Pallas, 42—Capt. W. Walpole, April at Tortola; 12th May arr. at Antigua from Jamaica.

Pearl, 20—Com. R. Gordon, 26th May arr. at Barbadoes from Halifax.

Pelican, 18 — Com. J. Gape, 24th May sailed for Smyrna.

Pelorus, 18—Com. R. Meredith, 9th Jan. Simon's Bay.

Phœnix, St.V.—Com. R. Oliver, Woolwich.

Philomel, 10—Com. W. Smith, 18th June at Gibraltar.

Pickle, 5—Lieut. C. Bagot, Bahamas.

Pike, 12—Lieut. A. Brooking, 2d July arr. at Falmouth; 3d at Plymouth; 15th sailed.

Pincher, 5—Lieut. J. Hookey, Bahamas.

Pluto, St. V.—Lieut. T. R. Sulivan, 2d May Fernando Po, from Ascension.

Prince Regent *Yacht*—Capt. G. Tobin, Deptford.

Pylades, 18—Com. E. Blankley, 21st Jan. at Buenos Ayres; 16th April at Monte Video.

Pyramus—Hamoaze.—This vessel is to proceed, in charge of the Forte with convicts to Bermuda.

Racer, 16—Com. J. Hope. Ports. Fitting.

Racehorse, 18—Com. F. V. Cotton, 8th May left Jamaica for Nassau.

Rainbow, 28—Capt. Sir J. Franklin, Knt. 8th June at Malta.

Raleigh, 18—Com. A. M. Hawkins, 20th May at Malta.

Rapid, 10—Lieut. Com. F. Patten, Portsmouth, fitting.

Rattlesnake, 28—Capt. C. Graham, 23d Dec. sailed for Lima and California.

Raven, S. V. 4—Lieut. W. Arlett, Mediterranean, surveying.

Revenge, 78—Capt. D. H. Mackay, 20th May arr. at Plymouth. Hamoaze.

Rhadamanthus, St. V.—Com. G. Evans, 17th May arrived at Barbadoes; 20th left for Jamaica; arrived 26th May.

Romney, *Troop Ship*—Mr. R. Brown, arr. at Halifax; 1st June sailed for Bermuda. arrived in Plymouth Sound 14th July, after a passage of 21 days.

Rover, 18—Com. Sir G. Young, Bart., 8th June at Malta.

Royal George *Yacht*—Capt. Right Hon. Lord A. Fitzclarence, G.C.H., Portsmouth.

Royal Sovereign *Yacht*—Capt. C. Bullen, C.B., Pembroke.

Royalist, 10—Lieutenant R. N. Williams, Plymouth station.

St. Vincent, 120—Capt. H. F. Senhouse, 8th June at Malta.

Salamander, St. V.—Com. W. F. Austin, Milford.

Samarang 28—Capt. C. H. Paget, 16th April at Rio Jan.; arr. from Coquimbo 29th Mar.

San Josef, 110—Admiral Sir W. Hargood, Capt. G. T. Falcon, Hamoaze.

Sapphire, 28—Capt. Hon. W. Trefusis, 6th Feb. at Jamaica.

Satellite, 18—Com. R. Smart, 6th June arr. at Spithead; 17th June sailed for South America. Passenger, Lieut. Rothery, R.N.

Savage, 10—Lieut. R. Loney, 19th May at Lisbon; 7th June off Oporto.

Scout, 18—Com. W. Hargood, 31st May arr. at Spithead; 9th sailed for Plymouth; 19th sailed for Mediterranean.

Scylla, 18—Com. Hon. G. Grey, 27th May sailed for Tripoli.

Seaflower, 4—Lieut., J. Morgan, Portsmouth station.

Serpent, 16—Com. J. C. Symonds, 18th July arr. at Spithead from Sheerness. 20th July sailed for West Indies.

Skipjack, 5—Lieut. W. Shortland, Bahamas.

Snake, 16—Com. W. Robertson, 4th June arr. at Portsmouth; 15th sailed for South America. Passengers to join H.M.S. Spartiate, Capt. J. Whylock, R.M., Lieutenant W. J. Collins, R.N.

Sparrow, *Cutter*—Lieut. C. W. Riley, 30th June sailed from Falmouth for Oporto and Lisbon.

Spartiate, 74—Rear-Admiral Sir M. Seymour, Capt. R. Tait, 16th April at Rio Janeiro.

Speedwell, 5—Lieut. Crooke, 17th May arrived at Maranham.

Speedy, *Cutter*—Lieut. J. P. Roepel, 4th July sailed for Oporto; 7th arrived.

Stag, 46—Capt. N. Lockyer, 17th June arr. at Lisbon; 4th July sailed.

Swan, 10—Lieut. J. E. Lane, 10th June sailed from Sheerness for Leith, for Scotch fishery.

Sylvia, 1—Lieut. T. Henderson, Portsmouth.

Talavera, 74—Capt. E. Chetham, 4th July Tagus.

Talbot, 28—Capt. R. Dickinson, C.B. Cape Station.

Thunder, S. V.—Commander R. Owen, 26th June arr. at Portsmouth; 28th sailed; 29th arr. at Plymouth; 6th July sailed for West Indies.

Trinculo, 18—Com. Thompson, *act.*, 18th May at Ascension.

Tweed, 20—Com. A. Bertram, 4th May arrived at Port-au-Prince.

Tyne, 28—Capt. C. Hope, 24th Feb. at Valparaiso; arr. there on the 12th.

Undaunted, 46—Rear-Adm. Warren, Capt. E. Harvey, Cape station.

Vernon, 50—Vice-Admiral Sir G. Cockburn, K.C.B., Capt. Sir G. A. Westphal, Knt., 21st April at Jamaica.

[*]**Vestal**, 26—Capt. W. Jones, 18th July arr. at Spithead from Sheerness.

Victor, 18—Com. R. Russell, 15th May arr. at Barbadoes from St. Lucia.

Victory, 104—Adm. Sir T. Williams, G.C.B., Captain C. R. Williams, Portsmouth.

Viper, 6—Lieut. H. James, Tagus, 19th May.

Volage, 28—Capt. G. B. Martin, C. B. 24th June sailed from St. Helens.

Wasp, 18—Com. Jas. Burney, Portsmouth, fitting.

Wolf, 18—Com. W. Hamley, 1st Feb. arrived at Singapore.

Paid off into Ordinary.

Rapid, 10—15th July, at Portsmouth.

Commissioned.

Endymion, 50—At Plymouth, 20th June.

Pyramus—at Plymouth, 26th June.

Racer, 16—At Portsmouth, 17th July.

Rapid, 10—At Portsmouth, 13th July. 18th June at Gibraltar, 3d June arrived at Spithead, 5th into harbour. Recommissioned 16th July.

Wasp, 18—At Portsmouth, 20th July.

VARIETIES.

H.M. sloop Racer, 16, was commissioned on the 17th July, by Com. James Hope, and launched on the following day, in the presence of their Royal Highnesses the Duchess of Kent and the Princess Victoria, the Port Admiral, Lieut.-Governor, and heads of departments. Among the company we observed Admirals Sir Harry Neale, Graham, Moore, Tollemache, and a numerous list of naval and military officers. The vessel went off in beautiful style about a quarter before twelve o'clock, and their Royal Highnesses embarked at twelve and visited H.M.S. Victory, where they were received by a royal salute, with manned yards, &c. The royal party afterwards proceeded to Cowes. The following are the dimensions of the Races, which is constructed by Captain Symonds, and is to appearance a very beautiful vessel:—

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[*] The name of this vessel was inadvertently omitted in our last, although it appeared in the former number. The accident, however, has given us the opportunity of observing, that she is by far the handsomest and finest ship of her class in H.M. service.

	ft.	in.
Length of deck	100	8
Ditto of keel for tonnage . . .	78	9⅛
Breadth extreme to outside of wales.	32	4¾
Ditto, moulded	31	6¾
Depth in hold	14	10⅛
Burthen, in tons	430	0⅔
Draught of water, when launched, afore.	7	10
Ditto, abaft	12	3

Ports. Her.

Launch of the Rodney, of 92 *guns, at Pembroke.*—The anniversary of the battle of Waterloo was never more conspicuously brought to the remembrance of the inhabitants of Wales and Pembrokeshire in particular, than on the occasion of the launch of the longest and finest two-decked ship ever built for the protection of the inhabitants of our iron-girt isle. Soon after five o'clock in the evening a gun from the fort announced that the signal for "All's ready" had been displayed in the yard. Every eye was immediately fixed in the direction from whence the Rodney was to enter for the first time on her native element, into which she soon slowly and majestically glided, amidst the thundering shouts of thousands of spectators, and the firing of cannon from the shipping. Her run after taking the water was not near so rapid as that of the Royal William; her anchor was therefore sooner let go, and she was brought up much more easily, and presented her beautiful broadside to the shore; in which position she was not suffered long to remain, for the end of her cable was run out of hawse, and she was almost immediately warped into dock, to be coppered and fitted for sea. The ceremony of christening was performed by Mrs. General Adams (the Lady of Lieutenant-General Alexander Adams, of Holyland, near Pembroke, a near relative of Earl Cawdor.) This ship is built on the round-stern principle of Sir Robert Seppings, and is of extraordinary dimensions; her length being 243½ feet, breadth 52 feet 2 inch., tonnage 2,598 1-94th tons, with great height between decks for working her, and pierced for 92 guns, which are all to be 32 pounders. Her single broadside would pour at once into an enemy's ship the immense weight of 1, 470lb. of shot! What a dose of pills for the enemies of Great Britain! There is no three-decked ship of any nation that would be able to lie alongside of her for any length of time, and stand such physicking.—*Cambrian.*

British Shipping.—The number of vessels built in the year ending the 5th January last, was 708 in Great Britain, 25 in Ireland, and 26 in the Isles of Guernsey, Jersey, and Man; forming a total of 759 ships, of the burthen of 92,915 tons.—*Hull Paper.*

Two two-decked Ships, of 80 guns each, are ordered to be laid down on the slips at Pembroke, on which the Royal William and Rodney were built, to be called the Collingwood and Vanguard.—*Plym. Herald.*

By a recent Admiralty order, Pursers of ships in commission are to negotiate their bills for the payment of monthly allowance through merchants or bankers, instead of presenting them to the resident pay clerks at the different ports.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Captain—C. Hotham.

Commander—W. R. Dunlop, *retired.*

Lieutenants—T. Anson; G. N. Broke; J. Markett; F. B. Hankey; H. Murray; Hon. K. Stewart.

APPOINTMENTS.

ÆTNA, S. V.—*Lieut.* M. Arrindell.

ALBAN, St. V.—*2d Mast.* W. Parsons.

BARHAM, 50—*Mast. Assist,* W. K. Hall.

BELVIDERA, 42—*Lieut.* F. B. Hankey; *Lieut. Mar.* W. Cosser; *Assist. Surg.* J. Robertson; *Mid.* Hon. R. A. J. Drummond.

BRISK, 3—*Mate,* J. Stevens.

BRITANNIA, 120—*Surg.* J. Dunlop.

CALEDONIA, 120—*Lieuts.* E. Lake; H. Bagot.

CHALLENGER, 28—*Lieuts.* J. M. Clive; H. Tawse; *Master,* J. C. Barclay; *Sec. Mast.* E. P. Cole; *Mast. Assist.* G. Horwood; *Mate,* Mr. Hoops; *College Mids.* Messrs. Hotham, Baugh; *Clerk,* G. Wallis.

Endymion, 50—*Capt.* C. Roberts; *Lieuts.* C. E. Purvis; R. H. Elliott; C. E. Powys; N. Robilliard; *Sec. Mast.* J. Wade; *Mast. Assist.* Mr. Nosworthy; *Purser,* J. Martin; 1*st Lieut. Mar.* E. Bathurst.

Excellent, 58—*Lieut.* Hon. G. F. Hastings; *Mid.* R. H. Bunbury.

Forte, 44—*Lieut.* T.V. Baker; *Mate,* A. G. Tancock; *Sec. Mast.* H. C. Dillon; *Mids.* Messrs. H. Trollope, Sutton, C. A. Cole, R. Thomas; *Mast. Assist.* P. C. Rogers; *Assist. Surg.* J. Sloane; *Clerks,* J. Adams; J. S. Hunter.

Fox—*Lieut.* J. Riddle.

Hibernia, *Ord.—Boatsw.* T. Unwin.

Howe, *Ord.—Boatsw.* J. Gibson.

Hornet, 6—*Mate,* J. Strong.

Lively, 46—*Lieut.* J. S. M. Watson.

Nimrod, 20—*Mast.* S. E. Northcote.

Orestes, 18—*Lieut.* A. Montgomery.

Pembroke Dockyard—*Surg.* T. C. Jones.

Pylades, 18—*Master,* R. Frampton.

Racehorse, 18—*Assist. Surg.* G. B. Hatton.

Racer, 16—*Com.* J. Hope; *First Lieut.* W. W. Chambers; *Lieut.* H. W. Purcell; *Surg.* J. Wesley; *Assist. Surg.* C. Rankine.

Rapid, 10—*Lieut. Com.* F. Patten; *Purser,* J. C. Harris.

Revenge, 78—*Lieut.* Hon. J. R. Drummond.

Royal Sovereign, *Yacht—Assist. Surg.* J. M. Brown.

St. Vincent, 120—*Lieut.* J. R. Dacres.

Sheerhulk, Portsmouth—*Boatsw.* T. Morton.

Spartiate, 76—*Sec. Mast.* J. B. Harris; *Clerk,* H. Snow.

Speedy, 8—*Mast. Assist.* R. Knight.

Sprightly, *Cut.—Lieut.* J. Steane.

Swan, 10—*Assist. Surg.* J. Bowler.

Talavera, 74—*Assist. Surg.* H. Liddel.

Thunder, S. V.—*Clerk,* J. Milner.

Trinculo, 18—J. Thompson.

Undaunted, 46—1*st Lieut. Mar.* T. P. Dwyer.

Unicorn, *Ord.—Gunner,* J. Brocklebank.

Vernon, 50—*Com.* M. Swency; *Lieut.* R. B. Watson; *Mid.* H. G. Veitch.

Victorine, *Rev. Cut.—Lieut. Com.* R. Taylor.

Victory, 104—*Mate,* H. T. Rydes; *Mids.* H. A. Motley, J. C. Barclay; *Assist. Surgeons,* S. H. Hammond, R. Handyside, J. Hussey.

Wasp, 18—*Com.* J. Burney.

Chaplain—Rev. W. Lewis, Chatham Dockyard.

Royal Marines.—*2d Lieut.* J. P. Stevens, *Chatham Div.* *2d Lieut.* R. C. Spalding, *Portsmouth Div.*

Coast Guard—*Lieuts.* G. B. Bunbury, R. Dowze, W. Lane, R. Percival, J. Shambler, W. L. Stephens.

NEW MERCHANT VESSELS. FROM LLOYD'S REGISTER FOR 1833.

Reported to 20th June.

VESSELS.	RIG.	WHERE BUILT	TONS.
Abeona	Schooner	Yarmouth	72
Ace of Trumps	Schooner	Topsham	72
Augustine,	Schooner	Dungarvon	55
Betsey	Brig	Yarmouth	189
Brunswick	Schooner	Bideford	84
Cervantes	Barque	Dumbarton	199
Columbine	Barque	Dumbarton	199
Duke of Argyle	Ship	Newcastle	636
Eleanor	Ship	London	431
Eleanor	Ship	Leith	281
Emma	Snow	Milford	197
Fairy	Brig	Liverpool	161
Geo. Palmer	Brig	Sunderland	230
Gratitude	Barque	Yarmouth	271
Harlequin	Barque	Dumbarton	199
Harriott	Snow	Sunderland	219
Hudson	Brig	Yarmouth	188
James Morehouse	Sloop	Knottingley	51
Langton	Brig	Perth	176
Marianne	Schooner	Yarmouth	87
Mary	Schooner	Leith	100
Mary	Schooner	Anstruther	109
Mina	Barque	Poole	186
Parkfield	Ship	Isle of Man	496
Penyard Park	Ship	Gloucester	380
Ploughman	Schooner	Spey	71
Rapid	Schooner	Shoreham	178
Ravenswood	Schooner	Aberdeen	150
Russia	Snow	Portland	305

Reported to 20th June.

VESSELS.	RIG.	WHERE BUILT	TONS.
Trinculo	Snow	Cowes	298
Victor	Ship	Bristol	338
Vixen	Schooner	Hull	122
Warrington	Brig	Belfast	214
Wear Packet	Brig	Sunderland	230

Reported to 20th July.

VESSELS.	RIG.	WHERE BUILT	TONS.
Ann Brown	Schooner	Dumfries	44
Ariel	Schooner	Bridport	142
Brandford	Sloop	Yarmouth	59
Comet	Schooner	Bridgwater	68
Eliza and Catherine	Schooner	Derbyhaven	51
George	Schooner	Yarmouth	96
Governor M'Lean	Snow	River Thames	252
Liberator	Schooner	Waterford	124
Lively	Smack	Montrose	62
Mary	Brig	Yarmouth	183
Orcadian	Schooner	Newcastle	82
Pearl	Schooner	Greenock	91
Sir William Heathcoat	Brig	Sunderland	160
Sisters	Brig	Aberdeen	137
Star	Schooner	Milford	91
Superior	Brig	Stromness	127
Symmetry	Ship	Hull	293
Tamar	Schooner	Chepstow	116
Vulcan	Schooner	Port Glasgow	214

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1833.

Continued from page 429.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
389 Albion	Isaac	Cork	Quebec	47° N 33° W	2 May	
390 Bee	—	Grenada	Bristol	Not heard of	since	24 March.
391 Brothers	Brown	Sunderland	London	Swin	7 July.	Run foul of, cw. sd.
392 Catherine	—	Irvine	Quebec	BksNewfdld.	8 May	Crew saved.
393 Chance	Not heard	of since	11th June	—	—	From Maryport to Strangford.
394 Charles	Sanderson	Boston	St John' N B	Briar Island	—	Crew saved.
395 Clara	Moses	—	—	Off I. Wight	27 June	3 saved.
396 Clyde	Steam V.	Glasgow	Liverpool	Port Logan	June	Crew &c. saved.
397 Crown	Hopper	London	Quebec	BksNewfdld.	28 April	Crew saved.
398 Douglas	—	—	Norfolk	Gulf Stream	13 June	Abandoned.
399 Dunrobin Castle	Baillie	—	—	Lossiemouth	12 June	Total.
400 Eliza Of	Strangford	—	—	St George's C	20 June	
401 Elizabeth	—	Picton	New York	Hellgate	24 May	
402 Emerald	Storr	London	Quebec	Red I. reef	1 June	Crew saved.
403 Flora	Herring	Liverpool	N Brunswick	Blackwtr. Bk.	27 June	Crew saved.
404 Friendship	Hunter	—	—	Maplin Sd.	16 June	Crew saved.
405 Georges	Ogilvy	Greenock	Quebec	Off C. Ray	June	Abandoned.
406 Gleaner	—	Greenock	King's Cove	BksNewfdld.	June	Crew saved.
407 Good Intent	—	Newcastle	Rotterdam	Brielle Bar	15 June	Crew saved.
408 Gratitude	Dick	Glasgow	Hull	Islay Sound	7 July	Part cargo saved.
409 Harriet	Ross	Liverpool	Mobile	Riding Rocks	7 May	Crew saved.
410 Harvest Home	Hall	London	Miramichi	At Sea	9 May	By ice.
411 Hero	Wilson	Liverpool	Newfndld.	BksNewfdld.	April	By ice.
412 Hope	Atkinson	London	Quebec	Flint Island	22 May	Crew saved.
413 Hydery	M'Donald	Sydney	Bengal	Str. Singapore	21 Oct.	Crew arr. Manilla.
414 Industry	Sherlock	Arundel	London	Newhaven	27 June	Crew saved.
415 J. & H. Cumming	Fox	Liverpool	New York	Long Island	21 May	
416 Julia	Ewans	Sunderland	Quebec	At Sea	16 May	By ice, abandoned.
417 Lark	Metcalf	Sunderland	Amsterdam	Vlieland	12 June	Stranded.
418 Lively	Brockbank	Belfast	Lancaster	Not heard of	since	8 June.
419 Magnet	Todd	Newcastle	Miramichi	At Sea	21 May	Abandoned ?
420 Maria	Of Newcas	tle	—	C. Newfdlnd.	May	Crew saved.
421 Martha	Sewell	Liverpool	St. John's	—	18 May	Crew saved.
422 Margt Ritchie	Clarke	Androssan	Quebec	46° N. 45° W.	9 May	By ice, crew saved.
423 Mary	Smith	Coal laden	—	Brighton	27 June	Crew saved.
424 Mary	Rassely	Liverpool	Newfndld.	BksNewfdld.	28 May	By ice.
425 Mary	M'Nairn	Hambro'	Archangel	White Sea	21 June	By ice.
426 Melpomene	—	Greenock	Quebec	At Sea	24 May	Abandoned.
427 Menai	M'Creedy	Cardiff	Not heard	of since	11 June	Uncertain.
428 Nymph	—	Newfndld.	Portugal	Not heard of	since	24 April.
429 Perth	Davison	Shields	Perth	Shields	29 June	By fire, crew saved.
430 Prosperity	Blair	—	—	Strangfd. R.	7 July	Crew saved.
431 Ranger	Herbert	London	Miramichi	—	11 May	By ice.
432 Raikes	Beeton	Liverpool	Havr Grace	Off C. S. Francis	May	Crew saved.
433 St. Joseph	Of New	Brunswick	A Schooner	44 N 61 W	May	Foundered.
434 Susan	Gillespie	—	Liverpool	Liverpool	June	None saved.
435 Three Friends	—	Gibraltar	Tampico	Nr. Tampico	April	Crew saved.
436 Two Sisters	—	Halifax	Glasgow	At Sea	April	Aband. crw. saved
437 Unknown	A Sloop	—	—	S. Bride's By.	June	
438 Volunteer	—	Cork	Quebec	Nr Louisberg	30 May	Crew saved.
439 Wanderer	—	Bordeaux	Leith	Nr. Leith	6 July	Crew saved.
440 Wanderer	Transport	—	—	Barbadoes	10 June	
441 Waterloo	—	Newcastle	—	BksNewfdld.	14 June	By ice.
442 Wellington	Heron	Newcastle	Quebec	BksNewfdld.	10 May	Crew saved.

FURTHER PARTICULARS OF WRECKS.

J. and H. Cumming, Fox.—Ran on the south end of Long Island in a fog. Two passengers drowned.

Clyde, Steamer.—Struck on a sunken rock, near Port Patrick; was afterwards run on the rocks near Port Logan, and bilged. Crew and passengers saved.

Wreck No. 385 of our last Number, name then unknown, was the Fly, of Sunderland.

Raikes, Catherine, Waterloo, Wellington, Crown, Hero, and Martha.—These vessels have been wrecked among the islands of ice which have been so numerous this spring on the banks of Newfoundland. In addition to these, early in May two copper-bottomed vessels were seen by the Madeira, which vessel had arrived safely from the Clyde, at Newfoundland. They were seen lying on the outer edge of the ice, between two and three hundred miles from the land: one appeared to be a brig, or large schooner; the other a ship. This is a melancholy verification of the remarks in page 329 of our June number. Most of the crews have been saved, but there has been sad loss of life, as well as property.

Eliza, of Strangford.—Fallen in, with bottom up, by the Betsey, Moore, arrived at Whitehaven.

A violent squall was experienced at New Orleans, on the 22d of May, from the NW, which, for a few minutes, threatened destruction to every thing. In five minutes, 16 vessels, square-rigged, parted and drove into the stream: all of them, besides others, sustaining more or less damage.

Albion, Isaac,—This vessel was fallen in with, in a sinking state, and 15 persons, out of 30, saved with difficulty, by the Neptune, since arrived at Newry. The following persons unfortunately perished: Mr. Godson, of Cove, his wife, 4 children, nephew, and 2 servants; Mrs. David Lynch, Mary her child, and Owen Lynch; Thomas Isaac (second mate); Robert Errington (apprentice); and a seaman (a foreigner.)

Melpomene.—Struck by a sea on her passage to Quebec, was abandoned in consequence three days after. The crew saved by the Isabella, Donaldson.

Susan.—Lost, with all on board, entering the Mersey, during the severe gales in the latter part of June.

Flora.—Lost on Blackwater bank, Wexford.

Clara.—We quote the following from the *Times*, with the view of assisting to discover the persons who could be guilty of such brutal conduct:—J. Moses, master of the Clara, of 16 tons, a fishing-vessel, states, that on Wednesday night, or rather at half-past two on Thursday morning, as he was lying to in a gale of wind in the Channel, about 25 miles to the southward of Dunnose, the weather very squally but perfectly clear, he was run foul of by a large sloop, which he thinks was a Welsh slate vessel, running to the eastward; the concussion was so great, that he instantly saw it would prove fatal to his own craft, and therefore himself, with John Webb and Charles Carr, a boy, clambered on board the sloop; here, however, they were not allowed to remain, but, by main force, were thrust on board their own sinking vessel, with an assurance that the sloop should lie by them for protection; no sooner, however, were they put out of the sloop, than the brutes sheered off, and were soon of sight. Moses and his companions got their skiff into the water, a 12-foot boat only, and, finding their vessel going down, trusted themselves in it, and in 10 minutes from their being ejected from the sloop, their own little vessel went down. It was blowing very hard, the sea running very high, and their only safety was in keeping the skiff's head to the wind, while the boy was employed to bale her out, and she was frequently more than half full of water. They continued all day in this perilous state, no period having occurred for 17 hours when they could endeavour to reach the land. About half-past 7 on Thursday evening, a Dutch pilot-boat fortunately saw them, and picked them up, nourished them, and behaved with every degree of kindness, and on Friday morning put them into a large wherry she fell in with off the Owers Light. The sloop complained of has a white bottom, and topsail yard; and, if she has arrived at her destination, she will be found to be damaged on the starboard bow, and that her starboard yard-arm is carried away.

Dunrobin Castle.—On Tuesday night, the 11th of June, when the storm came on, the Dunrobin Castle, of Leith, Baillie master and owner, coal-laden, was lying at anchor in the bay of Portgordon, but the weather becoming more tempestuous, and it being impossible to get the vessel safe into the harbour, the master determined on running to Cromarty. In taking up the anchor, the vessel received severe damage in the bow, and soon became unmanageable, from the quantity of water she was drawing, and was driven ashore on the sands to the west of Speymouth, near a place called the Bear Head. She lay on her side, with her deck to the sea, and the master and crew, together with a pilot from Portgordon, were obliged to cling to the rigging, to avoid being washed overboard. The surge, in the mean time, was dashing over her with great violence, and it was with much difficulty that the men could keep their hold. At last, the hatches having burst open, one of the men jumped into the sea, in the hope of getting hold of the hatches, and being floated ashore upon them; but he was drawn back by the receding wave, and soon ingulfed in the foaming element. His companions, however, still hung to the wreck, and, on Wednesday morning, were perceived by the people of Kingston, who came to their aid. One of them, Alexander Geddes, a ship-carpenter, behaved in the most praiseworthy manner, having, after several fruitless efforts had been made, succeeded, at the imminent risk of his own life, in getting a rope thrown to the poor fellows, by which they were rescued from their perilous situation, after having clung to the shrouds upwards of seven hours. The vessel soon became a total wreck.—*Inverness Courier*.

Wanderer.—On the 6th of July, during a gale from the SW, the schooner Wanderer, of Stornaway, from Bordeaux to Leith, with a rich cargo of wines, spirits, seeds, fruit, &c. struck the Vous Rocks, a little to the westward of the harbour, and immediately fell over on her broadside. The crew, seven in number, took to the rigging, with the exception of a boy, who was washed overboard and drowned. After continuing some time on the rock, the vessel floated off, and came ashore below the west end of Earl's-ferry, about a musket-shot from the beach. At this time the situation of the crew was dreadful in the extreme; the sea was running very high, and breaking incessantly over their heads, when the coast-guard stationed at Elie, with praiseworthy activity, had one of their light boats conveyed in a cart to that part of the beach where the vessel lay. The boat was immediately manned by Lieutenant Randal, of the coast-guard, and his crew, with several spirited individuals belonging to Elie and Earl's-ferry, who generously volunteered their services in the perilous attempt to save the unfortunate crew. After a great deal of exertion, and no little danger, they succeeded in reaching the wreck and bringing the crew of the vessel safely ashore.—*Fife Herald.*

Ranger, Herbert.—This vessel struck on a piece of sunken ice on the banks, and went down head-foremost immediately. Master and crew saved in the long boat.

Julia, Ewans.—From Sunderland to Quebec, struck a field of ice on the 16th of May, which stove in the bow port, and it was found necessary to abandon her. She was boarded on the following day, when there were seven feet water in the hold, and the crew were obliged to leave her.

Barbara, of Greenock.—The wreck of this vessel, No. 344 of our last number, has been towed into Lytham by three fishing vessels. There is no doubt that the whole of her crew found a watery grave on her going down.

Gleaner.—This vessel struck an iceberg on her way to Newfoundland, in June last, and almost immediately sunk. Crew arrived at Cape Breton.

Wanderer, Transport.—Struck on the Cobler's Rocks on the 1st of June, and became a complete wreck. The crew and troops were landed in safety. The wreck was sold on the 8th of June fer £30; anchors and cables for £57. 10s.; and the few materials saved, £12. 10s.

Births.

At Wilton-street, the lady of Capt. F. Vernon Harcourt, R.N., of a daughter.

At Patrimoine, Jersey, the lady of Captain Holt, R.N., of a son.

Near Edinburgh, the lady of Commander Charles Smith, R.N., Coast Guard Service, of a son.

At Trafalgar-place, Stoke, Plymouth, the lady of Capt. J. Wilson, R.N., of a daughter.

At Hove, Brighton, the lady of Lieut. E. Franklin, of a daughter.

At Bath, the lady of Lieut. G. Beazely, R.N., of a son.

At Sunning Hill, the lady of N. Timouth, Esq. R.N., of a son.

At Tiverton, the lady of Capt. J. A. Duntze, of a daughter.

On the 7th June, at Mount Pleasant, the lady of Captain John Hollingworth, R.N., of a son.

The lady of Joseph Ballingall, Esq., Naval storekeeper, Bermuda, of a daughter.

At St. John's, Cornwall, the lady of James Boyle, Esq. R.N., of a son.

Marriages.

At Stonehouse chapel, by the Rev. J. W. Campbell, Mr. Henry Paitt, R.N., to Miss Mary-Turner Parsons.

At Liphook, Lieut. H. Binstead, R.N., to Emily, third daughter of J. Fullech, Esq.

At St. Andrew's Church, Plymouth, by the Rev. J. Hatchard, Lieut. R. Biffin, R.N., to Elizabeth, second daughter of Mr. James Greenway, Parade.

At Sidmouth, Captain Nesham, R.N., to Elizabeth, youngest daughter of the late Col. Nicholas Bayly, brother of the late Earl of Uxbridge.

Deaths.

At Wootton Bassett, aged 66, R. Goddard, Esq., sen. Post Captain, R.N.

Lately, aged 77, George Chenye Grout, Esq., the oldest Purser in the Navy, having acted in that capacity in the year 1775. In his active life he was much respected in the service. He was Purser of the Monmouth in the mutiny at the Nore, and in Duncan's action off Camperdown. In private life he was esteemed for his friendly and generous disposition.

At Malta, on the 16th of May, 1833, aged 18 years, Mr. Thomas Huskisson, Midshipman of his Majesty's ship Cordelia, eldest son of Capt. T. Huskisson, R.N. Possessing the most gentlemanly and amiable qualities, he was loved and esteemed during life by all who knew him. At his death he is mourned and lamented by his disconsolate parents, and was attended to his grave by the whole of his sorrowing officers and shipmates.

At Haslar Hospital, Mr. Butter, many years Boatswain of the Sheer-hulk, in Portsmouth harbour, and of whom it may be said, that no man in his station of life could by possibility be more respected than he was. His brother officers, his superiors, and all whose duty led them to his acquaintance when living, will long regret his loss.

At Landport, Mr. Robert Stickland, Boatswain, R.N.

On the 6th July, at St. Alban's Place, Pall Mall, Captain C. J. Kerr, R.N.

On the 13th July, at his lodgings in London, after eight hours' illness, Charles Dennithorne Unwin, Esq., Purser, R.N.

At Newlyn, on the 10th July, Lieut. John-Jones Pearse, R.N., (1814,) aged 38.

At Bridport, Lieut. Wm. Chick, R.N., (1815,) aged 43.

After a long illness, Richard Jones, Esq., Surgeon of his Majesty's Dock-yard at Plymouth.

At Sheerness, James Reed, Esq., Secretary to the Captain Superintendent at that port.

At Westgate, Chichester, Lieut. W. H. Boyce, R.N., aged 49.

On the 2d July, at Forton, Mr. Robert Gill, Assistant-Surgeon, R.N., after a few days illness.

At the Royal Hospital at Haslar, aged 34, Lieutenant J. W. Purcell, R.N., very much lamented by a numerous circle of friends.

Lately, Morgan Finucane, Surgeon, R.N., (1796.)

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WESTERN COAST of the MOREA from the SOUTHERN PART of the MONTAGUE SHOAL

[illegible] by [illegible]

A. Miles R N del.

[illegible] from the SOUTHERN PART of the MONTAGUE SHOAL

[illegible]

VOYAGES AND MARITIME PAPERS.

I.—ON THE CIRCUMNAVIGATION OF AFRICA BY THE ANCIENTS.

———————— Lux altissima fati
Occultum nihil esse sinit, latebrasque per omnes
Intrat et obstrusus explorat famæ recessus. *Claudian.*

THE quality possessed by the magnet of attracting iron was well known to the ancients,* but when, and where, and by whom, the remarkable property of its polarity was first discovered is doomed, it would seem, to remain an impenetrable secret. Nor is the first application of this quality to the purposes of navigation, (a circumstance that must ever rank among the most important, as well as the most wonderful, events in the history of the progress of human knowledge,) better known.

That no records should remain, no trace be found, of the success or failure of the earliest experiments of him who first launched his frail bark into "the wild ocean's wave," under the direction of this wonderful instrument, is difficult to account for, even with every allowance for the unenlightened age in which it was made.

It has often occurred to us, that, were it possible to bring to light the preparatory memoirs, and the original journals, of the first Portuguese navigators, documents that have for ages past slumbered beneath the shade of Portuguese sloth and ignorance, that they would afford materials for one of the most curious and instructive histories of the early progress of maritime discovery and geographical science, that has ever yet been exhibited. We are aware, that so disfigured are these early narratives by fiction, so strongly impressed are they, almost in every page, by the bigoted and barbarous prejudices of the age in which they were written, that the philosophic eye of modern research turns from them with pity and disgust.

But it must be recollected, that, like the father of profane history, Herodotus, these writers were hardly emerged from a story-telling age, and that the pleasures of wondering had not been so superseded by the pleasure of knowing, as to have taught them the necessity of not consulting the tastes, moreover, and the habits of the people for whom they wrote, which, after all, must ever have a powerful influence on the composition of a writer. Whenever, therefore, a man appears who has the courage to wade through the undigested mass of exaggeration and fable they present, some important and curious light will, we predict, be thrown on the causes that first generated the spirit of maritime discovery among the Portuguese. That the idea of reaching India by circumnavigating the southern extremity of the African continent was not an original conception of the immortal Prince Henriques, is allowed by the Portuguese themselves. *Candido Luzitano*, an old chronicler, states, that the "animus" was produced by a map of the world which his brother, Don Pedro, who had travelled extensively in foreign parts, brought back with him to Portugal. This map it is probable that the prince procured at Venice, at that time the seat of nautical science. And a record still remains in the Convent of St. Michael de Monti, at Venice, of Alphonso the 5th, of Portugal, having ordered a copy to be made of the famous map of Fra Mouro, deposited there, in which Africa is terminated by Cape Diab; and a note is inserted, that a ship from India had passed the extreme point south, 2000 miles towards the W.S.W., in the year 1420. The date of this map is 1459, twenty-seven years previous to the voyage of Dias to the Cape of Good Hope. That an intimate conviction of the reality of this passage existed in the mind of Prince Henry is certain; for, so early as 1444, he employed Luiz Cadomasto, a noble Venetian, in prosecuting his discoveries. But whether this conviction was produced by the map in question, or by the works of the Arabian geographers, who, so early as the fourteenth century, were aware of the fact, or from the more early narrative of Herodotus, of which we shall presently treat, is at present an impenetrable mystery. Still it proves, nevertheless, that the circumnavigation of Africa was an old tradition, that had been handed down from age to age.

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* Democrates began to make the arched roof of the Temple of Arsinoe all of magnet, to the end, that within that temple the statue of the princess, made of *iron*, might seem to hang in the air by itself.—Pliny, Book 4.

From the absence of those detailed narratives that exist in modern days, and which either were never written, or have perished in the wreck of time, our information of the knowledge acquired by the ancients of the African continent is extremely limited and imperfect. The northern parts were, however, known at the earliest period to the European nations, for its several districts occur with great frequency in their writings. But on its southern extremity a great diversity of opinion was entertained. Eratosthenes believed that it was surrounded by the ocean. Scylax says it was the opinion with some, that Africa was a peninsula; but, on the other hand, it was denied by Polybius and Ptolemy. Notwithstanding this discrepancy of opinion among the ancient geographers, various expeditions were undertaken, with the view of exploring the unknown regions of this vast section of the earth; and extraordinary efforts were made to effect its circumnavigation at a very early period of history.

The first mention of the circumnavigation of Africa is found in the writings of Herodotus. It was made by order of Necho, king of Egypt, 600 years before our era, 175 years before the age of the historian, and 400 after the voyages of the fleets of Solomon and Hiram. It is thus briefly related:[*] "Necho having desisted from his attempt to join by a canal the Nile with the Arabian Gulf, despatched some vessels under the conduct of the Phenicians, with directions to pass by the Columns of Hercules, and, after penetrating to the Northern Ocean, to return to Egypt. These navigators, setting out from the Red Sea, entered the Southern Ocean. On the approach of autumn they landed in Lybia, and planted some corn in the place where they happened to find themselves. When this was ripe, they again departed. Having thus consumed two years, in the third they passed the Columns of Hercules, and arrived safe in Egypt. Thus was Africa for the first time known.

"Their relation," says the venerable patriarch of history, "may obtain attention from others, but to me it seems incredible, for they affirmed, that having sailed round Lybia, they had the sun on their right hand"—(Melpomene.) In an age when astronomical science was so imperfect, that the historian should express his disbelief of the statement of these navigators, on account of their affirmation respecting the different position of the sun, ought not to excite our surprise. But, in the present age, it is the most decisive evidence of the truth of the fact, since this must have been their actual observation, after passing the Equator.[†]

Although the geographers of antiquity believed that a communication existed between the Indian Ocean and the Atlantic, their opinions were divided as to the fact of its circumnavigation. It was believed by Pliny, who attributed it to the Carthaginian Hanno,[‡] but doubted by Strabo, Polybius, and Ptolemy.

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[*] Melpomene, Lib. 2.

[†] Herodotus further says, that the Atlantic, Indian, and Mediterranean Seas, formed but one ocean, and that Xerxes commuted the capital punishment of an individual of high rank into that of sailing round Africa.

Cornelius Nepos mentions, that in his day, Eudoxus, a great navigator, sailed from the Arabian Gulf to Gades, Lib. 5-1. And Pomponius Mela says the same, Lib. 3.

[‡] Pliny was mistaken. Hanno never reached farther than Sierra Leone, and, according to others, only as far south as Cape Nun. It is to be regretted, that this curious remnant of antiquity should be so brief. The principal object of the expedition is thus described in the journal, which opens as follows:—"It was decreed by the Senate of Carthage, that Hanno should make a voyage beyond the pillars of Hercules, and found Liby-Phœnician colonies. He sailed accordingly, with 60 ships of fifty oars each, and a body of men and women to the number of 30,000, and provisions, and implements of husbandry. The truth of the periplus of Hanno, like the narrative of Herodotus, has been much questioned, but its authenticity is now clearly established. "C'est un beau morceau de l' antiquité," says the great Montesquieu, "que la relation d'Hannon, le meme homme qui a executé a ecrit il ne met aucune ostentation dans ses recits. Tout ce qu' il dit du climat, du terrain, des mœurs, des manieres, des habitans se rapporte a ce qu' on voit aujourdhui dans cette cote d'Afrique; il semble que c'est le journal d'un de nos navigateurs."—Esprit des Lois, book 21. Since Montesquieu wrote this, many of the facts related in the journal have been further triumphantly proved by the test of geography, or a comparison with the descriptions of the most recent modern travellers.—See Mungo Parke.

Damien de Goes, an old Portuguese chronicler, mentions, respecting the little island of Corvo, the most westerly of the Azores, which the seamen in his time called *Ilha da Marca*, because its high mountain was their sea-mark, that on the north-eastern summit of this mountain was the image of a horse-man, in a garment resembling a Moorish cloak, bare-headed, the left hand on the horse's mane, the right arm extended, and pointing with the finger to the west. Both the statue and the horse were hewn out of the solid rock, and at the base there was a Greek

But, although in those early ages the true figure of the earth was not unknown to the world, this knowledge was confined to a certain few; and even some of the greatest philosophers and poets had very confused and erroneous notions on the subject, the greater part of them regarding it as a flat surface of undefined extent, surrounded by the ocean; which opinion appears to have been entertained by Homer, who, in concluding his description of the shield of Achilles, which was meant to represent the prevailing notions respecting the state of the earth at that time, says—

> "Thus the broad shield complete, the orbit crown'd
> With his last hand, and pour'd the ocean round:
> In living silver seemed the waves to roll,
> And bent the buckler's verge, and bound the whole."
>
> *Iliad, Book* 18.

So completely did the mythology of Homer become the religion of ancient Greece,* that Aristarchus of Samos, and Anaxagoras, who maintained the doctrine that the earth revolved round its own axis, and round the sun, were branded with the most ignominious titles, and, like Galileo in modern times, narrowly escaped with their lives.

From the ascendancy that the Aristotelian philosophy obtained, it is not remarkable, that, during the space of near 500 years from the time of Herodotus to that of Strabo, so little should have been added to the science of geography. The conquest of the Romans westward did certainly bring them acquainted with parts of Europe hitherto but little known; but in the east, neither the Macedonian nor the Roman expeditions seem to have brought much to light that was before unknown, of the state of Asia, while in Africa† geography decidedly lost ground. In fact, so imperfect was the knowledge of this science even in the days of Cicero, that, by one or two letters, we find that he once entertained thoughts of writing a treatise on it himself.

We have hazarded the above disquisition, which we fear may be found tedious by our readers, in order to shew the grounds upon which were based the doubts or disbelief of antiquity of the circumnavigation of Africa mentioned by Herodotus.

For, of all the Greek writers, there is none who has been the

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inscription. This statue, it is supposed, was erected by Hanno. A Portuguese artist who had travelled in foreign parts was despatched to the Azores, in order to remove it to Lisbon; and the head and right arm of the man, and the head and left leg of the horse, were actually conveyed to that capital; but all attempts to remove the remaining parts proved fruitless: so that the artist, in order, says the chronicler, to veil his want of skill, gave out that the statue had been destroyed by an earthquake. The story rests on such authority, that we see no reason to doubt it; and we trust that some of our naval readers will, on their next cruise in that quarter, endeavour to ascertain if any traces of the statue or the inscription still exist.

* So firmly were they persuaded of the truth of that system, that they no sooner became acquainted with new regions than they immediately transported to more distant isles those fanciful beings which at first they had supposed to be inhabitants of places less remote.

† Montisquieu, book 20, chap. 8.

object of more invidious and unmerited obloquy than the venerable patriarch of profane history. He has been accused of sacrificing the dignity of historic truth to a natural fondness for fable, or to earn his popularity by gratifying the ears of his auditors. But, in spite of all the cavils and calumnies with which they have been assailed, the works of Herodotus have descended to the present time entire; the fame which they acquired at the festivals of Elis, and of Athens, above 2000 years ago, is now associated with feelings of veneration; and it is only just to the memory of this great historian to state, that the more we have become acquainted, by the means of modern travels, with the habits and customs of eastern nations, the less we are inclined to doubt whatever might at first excite our doubts, or shake our belief.[*] If Herodotus has been branded as a liar; Bruce, many of whose much calumniated assertions have proved to be facts, was, in a more enlightened age of the world, stigmatized as an impostor!

Since so many authors, therefore, concur in the fact of the existence of a communication between the Atlantic and Indian Oceans, we cannot well imagine why the other fact of the circumnavigation of Africa should be doubted. The fleets of Solomon and Hiram are supposed to have reached so far south as Moçambique. The Phenicians sailed to Britain for tin; and Hanno as far south, by the west, as Sierra Leone, to establish colonies; Scylax from the Indus to the Red Sea; and Alexander's admiral, Nearchus, from the Euphrates to the Indus.

Neither was the want of the compass any obstacle to the accomplishment, for the discovery of the passage might have been made, had the magnet never have been applied to this instrument. Without it, the fleets of Solomon and of Hiram sailed from the Red Sea to Moçambique, and from the same point the Roman fleets sailed to the Malabar coast, in a direct course 1750 miles, *although it took them forty days;* but then, it is true, they sailed with the monsoon, and had constantly a fair wind.[†]

The much debated question of the circumnavigation of Africa by the ancients has been treated in so profound, so masterly, a manner by our learned countryman, Major Rennell, that we shall group within the very narrow space to which we are limited, the outline of his arguments on this interesting subject:

"Now, as the difficulties of coasting voyages do not, in respect of their length, increase beyond arithmetical proportion, what should have prevented Scylax, Hanno, or the Phœnicians, from extending their voyages? It is certain, from the detailed voyage of Nearchus, and other histories of ancient navigations then, that the ships of those times advanced at a very slow rate. However, the disadvantage of delay might be compensated by security, as the nature and construction of their vessels were such as to enable them to procure shelter in most situations. The difficulty of procuring provisions in long voyages, along hostile shores, appears the most arduous part of the task, and it was morally impossible to store those vessels for such long intervals as are described. Herodotus indeed comes directly to the point, by saying, that the vessels waited in Lybia the ripening of the harvest, from grain which they had sown. This account, we have, no doubt, will be discredited by many. We shall only remark, that we are unacquainted with the particular habits and economy[*] of the navigators of that day: that they had plenty of time to perform their navigation in, had they even waited two harvests instead of one. Neither is the example a solitary one. Tamerlane, on his march to China in 1405, carried with him waggon-loads of seed-corn, to sow the fields on the road.

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[*] It is singular, that the Moorish song of death, "Wouliah wo," mentioned by all modern travellers, is also mentioned by Herodotus. "I am inclined," says he, "to think that the songs and laments which are sung in temples bear the same origin; besides, they are commonly used by the women of Lybia.

[†] Most of the vessels which run along the coast of Brazil are unprovided with a compass.

It has been found, from a number of examples of the rates of sailing of the galleys of the Phœnicians, Greeks, and Egyptians, that their mean run was no more than 37 Greek miles a day. This was certainly remarkably slow; but the ordinary mode of sailing was confined to daylight, for, without a compass, great danger must have been incurred in the night. Now, the distance from Suez, at the head of the Red Sea, to the mouth of the Nile, round Africa, may be about 224 degrees of a great circle; and if we allow 23 miles per day as a mean rate of sailing, as there are foul winds, and delays of various kinds, to be taken into the account, such as procuring water and provisions by the way, the former of which may be regarded as a constant case, it appears that 585 such sailing-days, or say $19\frac{1}{2}$ months, would be sufficient for the performance of the voyage. And, if to this we add a twelve-month more, for the harvest, for repairs of ships in different ports, and for rest and refreshment, we have an aggregate of no more than two years and a half, which comes within the time specified.

"It would be idle to suppose that a voyage of this extent would have been undertaken without a previous knowledge of the coasts of Africa, as well in the Atlantic as the Indian Ocean, to a very considerable extent southward. On the contrary, we should rather conclude, that it was such a state of knowledge that dictated the measure. Moreover, it may be supposed that the people of Africa communicated with each other by caravans, as they do at present. Whence some ideas of the extent, if not of the form, of the continent, must have been collected by the Egyptians. The enterprising spirit of Necho is mentioned by more than one historian; and during his reign, owing to the conquest of Phœnicia, the Egyptian marine was raised to a most respectable footing, and, aided by the yet superior skill of Phœnician officers, who conducted the expedition, every success might naturally have been expected from their joint efforts. We conceive, therefore, that the Phœnicians had at different times explored the shores of this continent, as far as the coast of Guinea on one hand, and Moçambique and Sofola on the other, before the great idea of circumnavigating it occurred to them. And much more probability attaches to the account, from its describing the navigation to commence in the east, than in the west, since it seems to prove that the determination arose from a previous experience of the winds and seasons; for the undertaking would have been a much more difficult one from the west, in the then state of navigation, than from the east. The progress of the Portuguese discoveries was, in fact, consonant to these ideas. A considerable interval elapsed between the settling of Congo and the discovery of the Cape of Good Hope. The progress, too, of the Spanish discoveries in South America was precisely similar. That continent was discovered by piecemeal. It will also be allowed, that such a degree of knowledge as has been supposed, of the two seas of Africa, would have furnished the ancient navigators with opportunities of acquiring a general, if not a particular, knowledge of the moonsoons, as well as of the north-east trade-wind; and, although they might not have penetrated so far into the Atlantic as to have known the south-east trade-wind, yet, from having experienced a southerly monsoon in the Indian sea, on the south of the Equator, they might expect a like wind in the Atlantic, at least six months in the year. Taking advantage, therefore, of the proper seasons, the Phœnicians, we suppose, entered the Indian sea during the early part of the northerly monsoon, that is, at the latter end of October, or the beginning of November, when they might be certain of a fair wind as far as the southern tropic, and also of a strong current in their favour, the whole way round the Cape of Good Hope. They might arrive at the southern tropic at the end of January, and, of course, during the best time to accomplish the most difficult part of their voyage, the doubling of the southern promontory of Africa. For this service, then, they would have a great part of the summer and the autumn before them; and it is to be noticed, that through most of the critical part of this space, the sea along the coast has a regular motion in their favour, to the westward, or south-west. It is a circumstance generally known, that, in the south Atlantic, from about the 30th degree of S. latitude to the equator, a regular S.E.

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[*] It is natural to suppose, that a king of Egypt like Necho could easily command, either by means of influence or negotiations, a supply of provisions for his fleet in the Red Sea. With equal probability we may conclude, that the habits of intercourse with the people along the eastern coast of Africa would, by means of the accustomed medium of commerce, procure them the necessary supplies; so that the fleet might be nearly as well victualled when it reached Moçambique as when it left the Red Sea. Much in that way is not to be reckoned on between that point and Angola, where they made their first halt, this being a fruitful country. Also, the rest of the western coast, as well as that of Guinea, and on to the Gambia and Senegal, there is at present, and was, no doubt, at that time, a numerous population, and plenty of provisions.

wind prevails in the open sea; and within the influence of the land, a southerly wind. Throughout this space, then, they would have a fair wind, of the existence of which they might have calculated upon by analogy.

"Thus far the circumstances have appeared to be clearly in favour of a circumnavigation from the east, in preference to that from the west. At what season they arrived at the equator it is difficult to guess, as it must have depended chiefly on the delays consequent on the state of ships, provisions, &c. Had they been able to proceed directly on, they might probably have completed their navigation to the Bay of St. Thomas by the middle of July, that is, allowing two months and a half between their passing out of the monsoon and their entering the S.E. trade, and nearly three months more from thence to the Bay above mentioned. But the probabilities are, they arrived there much later; but even had they arrived ever so early, the navigation to the westward, along the coasts of Guinea and Sierra Leone, could not well be begun till late in October, from the prevalence of N.E. winds and currents. Thus we have disposed of one whole twelve-month since the ships entered the Indian Ocean at Cape Guardafui; to which is to be added the time consumed in the navigation down the Arabian Gulf to that point, a voyage at least of two months, considering the season at which they must have left the head of the Red Sea. It must be understood, that, by these remarks, our object is rather to shew the possibility of executing the plan of this ancient expedition, by pointing out the steps by which it may have been accomplished, than to describe the exact progress of it, impossible to be known at this time.

"Let the next interval be supposed to have been between the Bay of St. Thomas and the River Senegal, a distance alongshore of about 39 degrees: this might have been accomplished at a proper season in about four months; and not in less, because the motion of the sea is generally adverse to the progress westward and northward, along the whole extent of Africa, from St. Thomas to Cape Bajador. From these causes, and taking into account every other kind of delay, whether casual or growing out of the want of the crews, they could not have arrived at the Senegal river before the middle of March. Here we may conceive the navigators to have been again within the sphere of their knowledge, on a supposition that this part of the coast had been already explored, and that they would be apprised, in consequence, of their relative position to the pillars of Hercules. According to this calculation, they had been nineteen months, or more, from the head of the Red Sea when they arrived in the Senegal river, and must have yet a voyage of five months to perform, in order to complete the circumnavigation; for, although the distance from this point to the Nile does not exceed 57 degrees, yet they would have to contend with an adverse trade-wind and current, during the first part of their voyage homewards, and which, from these circumstances, may have been the most arduous part of the whole. And it may also be supposed, that, waiting the September harvest at the Senegal river, they could not profit so much from the land and sea breezes as they had done before; so that we may calculate at least five months as the time necessary for them to reach the mouth of the Nile. Here, then, the aggregate of the time consumed during the voyage to the Senegal, together with the five months to the Nile, is just equal to two years. But we are told by the historian, that they consumed two years before they set out from their place of harvest in Lybia, to return to Egypt, so that on their arriving at the Senegal, there would be wanting of the two years an interval of about five months, if we suppose this to be the place at which they waited for a harvest, either of their own raising, or the ordinary harvest of the people of the country. It may be contended, that there was no more reason to wait a harvest here than at any other point of the voyage; but it may be said, that, having now ascertained the probable length of the remaining part of their voyage, they might resolve to victual themselves at once for that interval. We confess that no place appears more probable than this to wait the harvest described in the history, for the period of two years would apparently expire in this part of Africa, provided they made any great stay. They might even have delayed longer on their way than we have calculated, or might have been longer in their voyage down the Arabian Gulf than we suppose. In consequence, the time of waiting at the place of harvest might have been only short of five or six months, but may have been three or four only—a long time, certainly, to wait. But we ought not to form our opinions of ancient navigations by what we see practised in our own times; for the fact of shortening, by one third, the time employed in passages to and from India, within these few years, at a time when the art of navigation was supposed to be in a very improved state, may prepare us for believing that much greater changes and improvements had taken place previous to that period."

Such is the brief outline of the arguments of Major Rennell, in favour of the probability of the narrative of Herodotus. That the circumnavigation was not often, or perhaps ever repeated, we readily allow, from the numerous difficulties attending it; and that all recollection of it was in the lapse of time lost, is not surprising, in an age when registers of facts were more difficult to be preserved, from the absence of the art of printing; since the discovery of the eastern coast of New Holland, 150 years before the voyages of Captain Cook, had been quite forgotten, and was only brought to light a few years before his death, by the accidental discovery of a map of that continent in the Library of the British Museum.

The slow progress made by the Portuguese has been alleged as a triumphant argument against the circumnavigation of the ancients, but we certainly think without success; for the Phœnicians, in coasting voyages at least, we consider were as skilful as the Portuguese, while the peculiar structure of the ships of antiquity gave them infinite advantages. From their flatness, they drew much less water, from which they derived an incredible advantage, since it enabled them to run close alongshore, for shelter; and in default of which, they were drawn on shore. Numerous examples occur of this in history: the fleet of Nearchus was so placed, and a rampart drawn round it. Herodotus also mentions, that at Doriscus, Xerxes' fleet of 1200 triremes was drawn on shore; and also, that, in a gale of wind off Magnesia, 400 galleys were lost, in consequence of there not being sufficient space on the shore to haul them up. But the strongest argument that has been advanced on this subject is, the difficulty of stowing away sufficient provisions for such a lengthened voyage. Now, it must be recollected, that, of the marine of the ancients we absolutely know little or nothing; the very form even of their triremes and quinquiremes has sadly puzzled all our antiquarians. To reject, therefore, the testimony of ancient authors on the subject of their maritime discoveries, because we cannot satisfactorily account for this circumstance, is most unphilosophical; for, by a similar process of reasoning, we might with equal justice question the veracity of their great land expeditions; since we are also lamentably in the dark on every point connected with the commissariat system of the armies of antiquity. What faint glimmerings of light Vegecius has left us on this subject, are insufficient to unfold the secret springs of this intricate department; for, in fact, it will always be a phenomenon to military men, how the immense armies of Darius and Xerxes were provisioned in Thrace,* a country where, at this day, it would be difficult to subsist a corps d'armeé of 40,000 men.

Thus, we conceive the circumnavigation of Africa, told by Herodotus, will be no longer looked upon as the wild fiction of romance; for there really existed no physical impediment to its accomplishment, and it was, moreover, undertaken in a manner the most favourable to its execution. And it would be a most curious fact in the history of human knowledge, should this brief and much-despised narrative of the father of history, after surviving the wreck of upwards of twenty centuries, have proved, after all, the source from whence Prince Henry of Portugal derived his idea of sailing to India by doubling the southern promontory of Africa.

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* Jomini Traitè des grandes operations militaires.

Some seven or eight years ago there was discovered, imbedded in the sands at the Cape of Good Hope, a Phœnician galley. The circumstance is a strong collateral evidence, we think, of the circumnavigation having been made by them!

II.—A STATEMENT *of the* SHIPPING *employed in the Trade of the United Kingdom, in the Year* 1832, *exhibiting the Number and Tonnage of Vessels entered Inwards, and cleared Outwards, (including their repeated Voyages,) with the Number of their Crews; separating British from Foreign Ships, and distinguishing the Trade with each Country.*

COUNTRIES.	INWARDS.						OUTWARDS.					
	BRITISH.			FOREIGN.			BRITISH.			FOREIGN.		
	Ships.	Tons.	Men.	Ships	Tons.	Men.	Ships.	Tons.	Men.	Ships	Tons.	Men.
Russia	1,419	277,527	12,487	117	32,132	1,560	1,003	202,610	9,307	90	24,978	1,100
Sweden	59	8,335	432	150	25,755	1,318	69	9,660	525	86	13,403	709
Norway	42	3,798	220	549	82,155	4,429	43	3,411	269	554	86,540	4,515
Denmark	60	7,268	367	439	35,772	2,179	393	65,658	3,154	626	70,413	3,734
Prussia	401	62,079	2,922	428	89,187	3,823	265	41,027	1,990	349	70,252	3,045
Germany	821	130,443	6,553	362	31,057	1,711	798	121,872	6,181	425	37,247	2,022
United Netherlands	1,673	195,473	10,879	771	90,492	4,798	1,571	176,471	9,722	733	88,059	5,041
France	1,396	110,793	10,554	1,153	63,609	7,009	1,408	116,688	10,800	882	50,161	5,055
Portugal, viz. Proper	370	41,632	2,420	41	4,571	348	317	35,013	2,153	62	10,532	601
——— Azores	133	9,752	615	-	- -	-	204	16,348	1,134	2	408	22
——— Madeira	12	2,008	129	-	- -	-	17	2,408	158	-	-	-
Spain & the Balearic Isles	371	38,157	2,250	41	4,505	347	181	21,291	1,214	34	6,118	355
——— Canary Islands	22	2,508	130	-	- -	-	20	2,248	129	1	59	8
Gibraltar	16	2,257	138	-	- -	-	161	21,931	1,311	1	100	7
Italy & the Italian Islands	292	42,992	2,382	20	3,481	249	352	51,649	2,875	23	4,384	275
Malta	6	726	43	-	- -	-	34	5,873	309	1	150	10
Ionian Islands	48	6,694	373	-	- -	-	23	3,143	176	-	-	-
Turkey and Continental Greece	135	18,865	1,068	1	210	11	120	16,989	990	-	-	-
Morea and Greek Islands	13	1,985	100	-	- -	-	7	1,324	67	-	-	-
Egypt (Ports on the Mediterranean)	32	7,501	381	-	- -	-	50	10,569	524	2	305	18
Tripoli, Barbary and Morocco	10	1,067	59	-	- -	-	3	380	20	-	-	-
Coast of Africa from Morocco to the Cape of Good Hope	123	30,896	1,772	1	100	6	138	33,716	2,140	1	209	14
Cape of Good Hope	29	5,148	281	-	- -	-	51	10,167	575	-	-	-
Cape de Verd Islands	-	- -	-	-	- -	-	2	458	22	1	351	14
St. Helena and Ascension	-	- -	-	-	- -	-	2	283	18	-	-	-
Mauritius	64	17,287	947	-	- -	-	55	16,246	880	-	-	-
East India Company's Territories & Ceylon	168	72,895	4,921	-	- -	-	193	85,260	5,832	-	-	-
China	20	25,227	2,428	-	- -	-	19	24,648	2,344	2	794	37
Java	2	600	28	3	1,342	73	8	1,855	108	2	802	39
Philippine Islands	7	1,942	119	-	- -	-	7	2,158	115	1	147	13
Other Islands of the Indian Seas	-	- -	-	-	- -	-	2	908	67	-	-	-
New South Wales	38	12,231	696	-	- -	-	89	30,494	1,979	-	-	-
New-Zealand & South Sea Islands	-	- -	-	-	- -	-	2	550	38	-	-	-
British Northern Colonies	1,872	504,211	23,333	-	- -	-	1,872	489,233	23,570	-	-	-
British West Indies	828	229,117	12,656	-	- -	-	803	226,105	12,804	-	-	-
Hayti	24	4,242	231	-	- -	-	62	9,807	597	1	117	9
Cuba and other Foreign West Indies	38	8,162	407	16	4,590	192	72	15,214	840	12	3,881	180
United States	284	93,203	4,251	432	167,359	7,161	458	147,902	6,959	471	176,771	7,761
Mexico	34	6,006	327	1	78	8	20	3,740	211	2	326	20
Guatemala	1	227	14	-	- -	-	-	- -	-	-	-	-
Colombia	20	3,454	186	-	- -	-	19	3,380	198	-	-	-
Brazil	129	29,302	1,465	3	800	35	203	45,849	2,395	6	2,136	105
States of the Rio de la Plata	23	4,231	234	-	- -	-	30	5,857	335	2	326	19
Chili	6	1,081	66	1	235	16	20	4,007	245	-	-	-
Peru	13	2,612	156	-	- -	-	4	778	51	1	337	20
The Whale Fisheries	106	34,900	4,143	-	- -	-	116	38,240	4,797	-	-	-
Islands of Guernsey, Jersey, Alderney, & Man	2,212	125,136	9,425	17	2,619	126	1,995	104,154	8,086	1	19	2
Foreign Parts (the particular places cannot be specified	-	- -	-	-	- -	-	11	1,697	79	15	1,868	84
Total	13,372	2,185,980	122,594	4,546	639,979	35,399	13,292	2,229,269	128,293	4,391	651,223	34,834

Office of Registrar General of Shipping, Custom-House, London,
11th May, 1833.

JOHN COVEY, Reg. Gen.

III.—Particulars relating to the Loss of H. M. Ship Saldanha,[*] *commanded by the Hon. W. Pakenham, on the 2d of December*, 1811, *in Ballymastoka Bay, Lough Swilly.*

> "Where is she? like a well-trimmed bride
> She left in bright array,
> And light hearts with her on the tide
> Embarked! but where are they?"
>
> *Erin.*

The Saldanha, commanded by Captain Pakenham, sailed from Lough Swilly on the 2d of December, 1811, in company with his Majesty's ship Talbot, intending to take a fortnight's cruise. Early on the following day, a violent gale of wind arose from the northward, which separated the vessels, and about eight o'clock, the same evening, the people in the vicinity of Dooghbeg, a small village on the western side of the entrance of Lough Swilly, observed blue lights burning in the offing, and, from their appearance, judged that a vessel was standing in for Lough Swilly. The night was intensely dark; showers of snow and sleet followed each other in rapid succession, rendering it impossible to see even the powerful glare of blue lights, unless at a very short distance. And as none were left, of the whole crew, to relate the sad catastrophe, it is believed that the Saldanha must have shortly afterwards struck on the Swilly Rock, a quarter of a mile from the village of Dooghbeg. From thence the Saldanha drifted into Ballymastoka Bay, about half a mile higher up the Lough, where, in a few minutes, this ill-fated ship was literally dashed to pieces.

The situation of the wreck was first discovered about ten o'clock the same night by some countrymen returning from the fair of Kenoken, who kept the fatal secret to themselves for the most abominable of all motives, that of plunder, till daylight made the dreadful scene manifest to every one near the coast. The local authorities were made acquainted with the circumstances; but before they could arrive with a military force to protect the property washed on shore, every thing that could be moved had been carried off.

The person from whom we have this information was at that time about fourteen years of age. He accompanied the party to the wreck, and states, that the country people, on discovering the remains of the vessel, collected their horses, for the purpose of removing the plunder. The first that arrived saw a man reclining against the rocks under the high precipitous cliff which overhung the wreck. He was then so exhausted as to be unable to speak, but he made signs which they neither understood nor regarded, for the prospect before them was of too tempting a nature to admit of their attention being diverted from the treasure which they imagined lay within their grasp. Heedless of the sufferings of the shipwrecked sailor, they suffered him to remain more than an hour; and, had not their superstition been worked on by a trivial circumstance, he would probably have received no further attention, till every thing of value had been carried away.

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[*] The only statement respecting the loss of the vessel that we know will be found in Naval Chron. vol. 12, p. 42, extracted from an Irish paper. Unhappily, not one even was left to relate the melancholy event.

The first animal laden with the plunder happened to be a young colt, for horses of all descriptions were put in requisition. This little creature had not been broken in, even in their rude way; and as soon as the first two articles, two sailors' bags, were thrown across his back, he became restive and unmanageable, refusing to move from the spot, and endeavouring all he could to get rid of the unwelcome burden. This simple circumstance threw the whole party into consternation, and it was immediately construed into a special act of Providence, whom they believed had designed the colt to reprove them for not conveying the poor sailor from his miserable condition to a place of safety. Impressed with this belief, they forthwith left their plunder, and hastily placed the poor man across the animal's back, with his head and legs hanging down on each side. In this manner they set out towards the village of Dooghbeg; but the colt was still unwilling to bear his burden, and was as restless and as obstinate as before. Recourse was had to sticks and whips, and the animal threw the poor sufferer several times before they reached the village. On their arrival the vital spark had almost fled, and remained only to be utterly extinguished by the baneful effects of strong spirits, which they poured down his throat.

Thus, unhappily, was lost the life of the only person who appeared to have reached the shore alive; and with him all the particulars relating to the fatal event. Among fifteen bodies that were thrown on the beach by the surf, that of the Captain was found; and with it a dog, his faithful companion, howling by his side. From the contusions the bodies exhibited, it was supposed that they could not have reached the shore alive. A great many more were picked up a few days after, floating up the lough; one of them, that of an officer, was recognized by the miniature of his wife, which was suspended round his neck! Poor man, he had only been married fourteen days!

The rudder-chains of the vessel were found on the Swilly Rock, a proof that she had struck upon it; but neither the mast nor rigging were to be seen. This circumstance justifies the conclusion, that the mast must have been carried away outside, and that the vessel had run for the lough in the last extremity. Indeed, we have almost certain circumstantial evidence of such having been the case, from the foremast, foreyard, and rigging being picked up at Isla, off the coast of Scotland, and subsequently the main and mizen mast drifting on shore near the same place.

A gentleman residing at Isla observed something floating among the reefs, which extend some distance off the shore, and, on going out in his boat, discovered it to be the foremast of a vessel, with the foreyard across, and the sail furled. The rigging had sunk among the rocks, and kept it stationary. When the gear was disengaged, and the mast on shore, all the lanyards were observed to have been cut; and in the bunt of the sail they found a large iron poker, which, from the size, was supposed to be the galley poker. In all probability, this had been used as a lever in clearing some part of the wreck of the foremast, and, having slipped from the hand using it into the bunt of the sail, became buried in the folds of the canvass.

Viewing all these circumstances above related, there can be little doubt of the Saldanha having sustained some serious injury shortly before the blue lights were discerned on the evening of the 3d of December, by the ultimate disaster that took place in the lough; but to what cause the first injury is to be attributed, must for ever remain a conjecture.

The probability seems, that she must have struck upon some of the dangerous rocks off the coast of Ireland, at no great distance from the lough, and the concussion caused the masts to go by the board. We need not look far in support of this idea, as the Frenchman Rock lies directly in the fair way of a vessel making for Lough Swilly; and for long after the Saldanha was lost, the position of it was not known, and even its existence doubted.

It was about this period that the Boadicea frigate, returning from the westward after a cruise, struck on the Frenchman Rock. The water happened to be smooth at the time, and she did not receive much injury. The captain examined this danger personally in his gig, and found twelve feet water upon it; and I believe hitherto it has been laid down in the charts from his observations.

That the Saldanha could not have lost her mast from carrying a press of sail, is evident from the foresail having been found furled; and the short interval from her sailing, to the time she was discovered a wreck on the shore, being only thirty-six hours; we may conclude that the sea had not risen to any extraordinary height, at least not to injure a ship like the Saldanha. Besides this, there were many other vessels out during the gale, that did not experience any thing unusual in the force of the wind, or in the nature of the sea.

It is incontestable, that the Saldanha could not have received the first injury on the Swilly Rock, for her masts would have gone immediately on her striking, from the force of the concussion, there being only ten feet on it at high water, the distance being only half a mile, and the time from her striking on the rock to her going on shore in Ballymastoka Bay could not have exceeded a few minutes. This would not have given sufficient time for cutting away the rigging; consequently the masts would have been thrown up on the shore with the hull of the vessel; at least, some vestige of them would have been found there, instead of being drifted on the coast of Scotland.

IV.—ON THE ERRORS OF THE SEXTANT. *By Commander W. H. Bayfield, R.N.*

[Continued from Page 466.]

THE third possible error which I have previously alluded to—that which will arise, if the necessary corrections to the refraction, answering to the temperature and density of the atmosphere at the time of observation be neglected—is now generally known. Accurate tables, shewing the correction to the refraction for all altitudes and heights of the barometer and thermometer, are now to be found in the Nautical Almanac. Those previously given in books of tables, were neither sufficiently correct nor extensive; they did not go to temperatures sufficiently low for a Canadian, or other similar climate.

My motive for mentioning this correction here, is to call attention to it, by shewing the great amount of error which the neglect of it may occasion under particular circumstances. One instance, taken from my astronomical journal, will be sufficient to shew its importance.

At Quebec, on the 2d December, 1832, equal altitudes were observed for apparent time and error of the chronometer; they shew the latter to be fast of mean time $8^m\ 15^s,17$. The rate of the chronometer, gaining on mean time, was only $0^s,05$ per diem, so that there ought to have been no difference worth mentioning in the error of the chronometer at the A.M. and P.M. altitudes.

The same altitudes calculated separately as A.M. and P.M. observations, *without correcting the refraction for the barometer and thermometer*, gave the following results:

	s.
The A.M. observations made the chronometer less fast than the equal altitudes	7,48
The P.M. observations more fast by an equal quantity	7,48
So that the whole difference between the A.M. and P.M. observations was equal to	14,96

In either case, therefore, I had too much altitude, because I had not increased the refraction for the low temperature.

	Inches:		
The barometer at the A.M. obs. was	29.91,	thermometer	11° Fahr.
Do. . . . P.M. do.	29.89	do.	11

The equal altitudes 20° 26′ 00″.

With the necessary corrections applied to the refraction, and the altitude diminished accordingly, the observations were recalculated, and then,

	s.
The A.M. observations made the chronometer less fast than the equal altitudes by only	1,19
The P.M observations more fast by an equal quantity	1,19
So that the difference between the A.M. and P.M. observations was diminished to	2,38

Let it not be supposed that this is an extreme case, for it is not so, a temperature of 11° above the zero of Fahr. is by no means low in a Canadian winter; as many degrees below zero is common, and a temperature of 20° or 30° below zero occurs frequently.

But taking the above case, it will be seen, that if the corrections for the barometer and thermometer were neglected, there would arise an error in the apparent time, and consequently in the error of the watch, by either A.M. or P.M. observations alone, of 7s,48; but if those corrections were applied, of only 1s,19.

Again, if the A.M. observations of one day, at one place, be compared with the P.M. observations of another day, at another place, the altitude, barometer, and thermometer, remaining the same, and the corrections therefore neglected, or not applied, there would occur an error in the difference of longitude equal to 14s,96 of time. If the observations were for the rates of the chronometers, there would be an error in those rates equal to 14s,96, divided by the number of days and parts of a day elapsed between the observations.

In this country, the temperature, in summer, does not depart so widely from the mean as in winter. Yet still, both here and elsewhere, the fluctuations are considerable; and it frequently happens that when the barometer is much lower, the thermometer is much above the mean; in which case the sum of the corrections, for both instruments, to be taken from the refraction, will be very considerable, particularly when the altitudes are low. At no time therefore should these corrections be neglected.

In this and other similar climates, the fluctuations of temperature are sometimes very great in the same day, sufficiently so, particularly in spring, to affect the results of equal altitudes for time. Thus, in the month of May, I have known the thermometer at 7 A.M. to be 24°, whilst at 5 P.M. it had risen to 54° Fahr., making a difference of 30°. Now, if we suppose the observations, under such circumstances, to be made with an altitude of 20°, the change of temperature between the observations (the barometer remaining the same) will cause an error of 10″ of altitude, or of 20″ in the double altitude in the artificial horizon. The instrument should be set in the afternoon, so as to obviate this error. Thus, in the above case, the thermometer being observed a few minutes before the P.M. observations is found to have risen 30°, whilst the barometer remains unchanged. From the table in the Nautical Almanac it is seen, that the 30° difference of temperature with an altitude of 20°, causes a difference in the refraction of nearly 10″. The morning altitude was, therefore, 10″ less from this cause than it appeared, or 20″ less as observed in the artificial horizon. In order, therefore, to have equal altitudes, that is, that the true altitudes should be the same, A.M. and P.M., the sextant should be set to an altitude 20″ less at the P.M. observations, than it was at those of A.M.; otherwise there will be an error of about half a second of time in the error of the chronometer deduced from these observations. After every adjustment has been made, every possible cause of error guarded against, there will still remain a difference in the results of A.M. and P.M. observations for apparent time, even with the best instruments and the most practised observers. This, probably, arises from inappreciable errors in the instrument. I should have no hesitation in referring it to this cause alone, were it constant in its mode of operation, differing in degree according to the motion of the sun in altitude, and if I were certain that it was different in different instruments. But I have reason to think, that it is nearly the same in three different sextants in my possession.

In the summer months, the A.M. observations, for apparent time make the watch less slow than those of P.M. In winter, the reverse. The mean of A.M. and P.M. agrees with equal altitudes. In summer, therefore, I have too little altitude, in winter too much. An imperceptible error in the line of collimation can have nothing to do with this, because the effect of that would be, always to give too much altitude, and most so in summer, when the altitudes observed are usually highest.

An error in the *centre* of the instrument might possibly produce it, and it might then depend upon the altitude; and to this I should attribute it, if I could imagine it at all likely that three different sextants should have the same error in their centres.

I have not yet a sufficient number of observations, to enable me to draw a certain conclusion; but those which I have would lead me to infer, that this error depends upon temperature and altitude combined. That in temperatures much below the mean, and with low altitudes, too little refraction is allowed; and with high temperatures and altitudes, too much. It would require numerous and accurate observations to determine this point satisfactorily: in the mean time we may derive, from the foregoing observations and remarks, the following practical rules:—

1. In finding the index error—always to move the index the same way, with the tangent screw, as has been done in making or completing the observation.

2. In making a set of observations for apparent time, &c.—To observe the altitudes by both limbs, calculate them separately, and mean the results. In observing equal altitudes for time, it is a good practice to let the sun rise or fall through its own diameter, that is, to let the reflected sun pass over that seen direct in the artificial horizon, marking time at the contact of each limb. The means of the times will correspond to the altitude of the sun's centre, and one resetting of the instrument in the afternoon will do for two altitudes.

3. Never to omit applying the corrections for the height of the barometer and thermometer.

4. Never to compare A. M. observations, for apparent time, errors and rates of chronometers, with P.M. observations, or those by eastern and rising stars with others by western and falling stars. If from necessity, as sometimes happens, it must be done; endeavour, by repeated observations A.M. and P.M., to ascertain the difference between them, remembering that its amount will vary with the motion of the sun in altitude in each month of the year, and perhaps with the altitude independent of motion.

In the determination of the latitude of a place, observations of northern and southern, or circumpolar stars, are best; and when the difference of latitude is exactly required between two places or stations, the latitude derived from observations of objects southward, should not be compared with that derived from the same or other objects northward of the zenith.

Accompanied by an artificial horizon, the sextant has been said to form a "portable observatory." If a good barometer and thermometer be added, this may be said without greatly incurring the charge of exaggeration, so extensive and various are the uses to which it can be applied: but not unless it be in careful and skilful hands—not unless every correction be made, and every error obviated.

I am perfectly well aware, that, in the foregoing remarks upon the several causes of error in the results of observations with the sextant, there is probably little that is new. It is not possible that those errors should have escaped the notice of careful and experienced observers; but their remarks respecting them, or rules for avoiding them, have never, to my knowledge, been made generally public, and are not to be found in those books on nautical astronomy which profess to describe the errors of the sextant.

The great improvements in the construction of chronometers, astronomical instruments, and tables, of late years, call for a corresponding degree of accuracy in the observer and calculator.

It is because I am convinced, that this requisite degree of accuracy cannot be attained without attention to the possible errors which I have mentioned, that I have endeavoured to describe their nature, mode of operation, and effect, with the hope of rendering them more generally known, appreciated, and attended to; thus saving trouble to the young observer, who may not at first be aware of the cause of the differences in the results of his observations.

V.—REMARKS *on the long received Opinion of the superior* COLDNESS *of the* SOUTHERN REGIONS; *and on the Temperature of the Southern Extreme of America, &c.*

To account for the origin and dissemination of erroneous popular opinions is, generally, not only a work of difficulty, but often one of absolute impracticability. In many cases, however, there will be found some slight foundation for basing such opinions upon, but from inattention in writers, and the propensity which has always existed for exaggeration, reports of circumstances, imperfectly understood, lose their originality, and become not only wide of truth, but often without the slightest semblance of probability. Thus, it is not unlikely that the idea of superior cold existing generally throughout the southern regions, was first suggested by the accounts of former voyagers, of the low temperature experienced at, and near, the extremity of South America, in the summer season of that part of the world; and, generally, in the Southern Ocean, between the parallels of 53 and 63 degrees; and that the comparison was drawn with corresponding parallels in the North Atlantic, and with the climate of England. To inquire, however, why the whole hemisphere came to be included, would be a work of supererogation, and perhaps any investigation would prove futile as well as tedious; neither, indeed, have we patience to undertake such task, were it likely to turn out otherwise.

In considering the popular opinion on this subject to embrace the whole hemisphere of the south, perhaps the answer most consonant to truth, that could be given to it, would be a decided negative; yet such might appear presumptuous, and would be paying but an ill compliment to the judgment and attainments of scientific men, who have long ago maintained the contrary. At the present day, it may be presumed that there are few persons at all acquainted with the operations of nature, and who have paid any attention to the observations of enlightened travellers and voyagers, and the opinions and experiments of men of science who have treated on temperature, that would fall into the error of admitting a general comparison between the two hemispheres; abundant facts readily present themselves to every inquiring mind, to demonstrate that, perhaps, among the most irregular and mutable laws of nature, (for wise purposes, not always scrutable,) are those governing temperature.

Whoever expects always a similarity of climate in the corresponding latitudes of the two hemispheres, or throughout one parallel in the circle of the globe, will find himself deceived. On three, five, or ten degrees of latitude farther removed from the pole, in a temperate climate, temperature will often be found to increase, it is true, and perhaps in a greater degree than might at first be conceived; but it also happens, under particular circumstances, such as in countries that have not been very long under cultivation, and where forests abound, especially in the season of winter, that no such effect takes place.

We find, that in England, the counties of Devon and Cornwall, and Pembrokeshire in Wales, enjoy a much milder winter than the midland and northern counties. And that the same season in Newfoundland,[*] in 47° N.—in Quebec, 46½°—and Nova Scotia, 44°—is longer and more rigorous than in England in 52° N. If we go a little farther south, say to 40 or 41 degrees, we find, that about the meridian of 35 or 40° W. the imaginary line which divides two dissimilar climates passes, — that of New York being in the west; and that of Portugal, in the east. The difference between the state of the thermometer, the sensations of the human body, in the winters of the two countries, as well as the vegetable productions, are very distinct, although in the same parallel. Every observant traveller must have noticed, that in particular places there is, what may be termed a local temperature, the degree of which is either higher or lower generally than other neighbouring places. This, as is well known, arises from different causes; such as shelter, aspect, elevation, &c. Some situations are at times warmer than others, and *vice versa*; thus, for instance, a village in the west of England, situated one or two miles west from a large city, on a site elevated to about the level of the chimney-tops of the latter, enjoys, during the prevalence of easterly winds, at any time, but especially in the spring, a higher temperature than the city: the reason is obvious—the whole warm atmosphere of so populous a place is wafted over the village, and the cold current of air which is continually rushing in upon the city, becomes mitigated in passing through so warm a medium, and thus the difference is created: it must be observed, that the city lies open to a valley-draft on the east, without any obstruction to screen it, or any thing to affect an alteration in the rawness of the air.

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[*] Newfoundland! This, by the bye, is a most absurd name to be attached, and retained, to a land discovered some two or three hundred years ago. If Cabot (or his son) was the discoverer, why not let it bear his name? Surely some tribute is due to the memory of so enterprising a seaman. I should rejoice, Mr. Editor, to see the spirited and talented hydrographer of the Admiralty, under the sanction of that august Board, exercising his privilege by blotting out some of the many geographical misnomers—inappropriate hydrographical terms—and the erroneous orthography of proper names to places.

The uncertainty of judging of climate from merely the geographical position of places, without taking other circumstances into consideration, will be evident, upon reflecting on certain facts which have been established. Who would have suspected, that at New Orleans, in 30° N., in some parts of Mexico within the tropic, and even in the center of North Africa, in 12° N., the temperature at night, in certain seasons, is so low, as that ice is produced!

Having said thus much respecting the popular opinion, we shall make a brief remark or two on the assumed low temperature of some part of the Southern Ocean, and the lands therein. The data resulting from such investigation as we have been enabled to make of the subject, warrants the assumption, that the extreme of Patagonia, the Tierra del Fuego, and Staten Land, enjoy a very low temperature during the summer season of those latitudes; but to assert, that the mean annual temperature would be found, on comparison, to be less than in the corresponding latitudes, and under the same meridian in the north, (that is to say, in Labrador,) would in all probability be an error.

It is impossible to read the various accounts which relate to the Southern Ocean, however, without arriving at the conclusion, that that portion which lies between the 53d and 63d degrees, (in all such parts, at least, as have been visited, in the entire circle,) also enjoys a very low temperature, which must be decreased during winter, in the vicinity of the barren and sterile islands, to a degree of rigour equal to that which may be supposed to exist within the Polar circle. We may premise, however, that a series of meteorological observations are required, to the full confirmation of these facts. Where are these to be found?

Two or three of the early navigators wintered on the coast of Patagonia; and the Spaniards, French, and English had settlements, at different periods, on the Falkland islands.[*] These may, it is true, be consulted; but there have been, we have no doubt, more accurate, as well as more interesting remarks, made by the surveying expedition to the strait of Magellan; and by the officers of H.M.S. Chanticleer;[†] and we may reasonably believe, likewise, that meteorological journals have been kept by some, if not most, of the captains and officers who have, since the peace, doubled Cape Horn to and from the Pacific. The results of one or two casual visits may serve only to mislead, and from which erroneous deductions might be drawn: multiplied observations, for a series of years, can only be depended upon in this matter. The help, however, that is most needful, not being attainable at pleasure by every one, all we can do is, to invite its appearance through the same medium we ourselves have used.

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[*] We have now taken possession of these islands, no doubt for the purpose of cultivating them, in order to afford supplies for our shipping, which are employed in the southern fisheries, and to those trading to the Pacific. Difficulties there will be, doubtless, but not, perhaps, altogether discouraging, after what has been attained at Ascension, by a handful of marines under an active and intelligent leader. Neither will there be much apprehension of a dispute (such as took place on a former occasion) as to who *now* is the rightful owner. The policy is not questionable, when we find our trans-atlantic brethren were edging in there, no doubt, to gain a quiet and permanent footing; and if, according to human decision in such matters, we can establish a claim from priority of discovery, there will be no moral degradation in the seizure, as there are no indigenous inhabitants, save penguins and seals. Evidently, the Americans can have no pretensions; and the only thing to settle is, that of one of our early navigators (Cowley, Hawkins, or Strong) having been the original discoverer.

[†] We believe, that the voyage of H.M.S. Chanticleer, is preparing for publication, in which we have reason to think that this subject is treated on at some length.

The circumnavigation of the globe, between the 30th and 60th degrees of south latitude, by merchant vessels trading to Austral Asia, is now of frequent occurrence; and as these vessels are generally commanded by intelligent officers, and are provided with scientific instruments, we may be assured that the captains are in the habit of keeping a meteorological diary. The mean monthly temperature for several years, would throw some light on the subject, and afford us some decided information on the climate of the parallels they pass through in this circuit of the world. We may, therefore, here express a hope, that some of these gentlemen will be induced to favour us with their observations, through the channel of your pages.

We may be tempted, perhaps, by and by, to resume the subject, and endeavour, in the best way we are able, with such information as we can attain, to investigate it.

Pecheri.

VI.—The Danish Royal Navy, *in the Commencement of* 1833.

MILITARY BRANCH.

Admiral	1	
Vice Admiral	1	
Rear Admiral	3	
Commodore	2	Commands Line of Battle ships.
Commodore Captain	8	
Captains	20	Commands Frigates.
Captain Lieutenant	24	
Lieutenant of First Class	40	
Lieutenant of Second Class	40	
	139	

CIVIL BRANCH.

Chief Superintendent of the Dock Yards	1
Superintendents of the two Dock Yards	2
Ordnance Office	1
Surveyor of the Navy	1

Chief for the Academy of Midshipmen	1
Commandant of the fortress Christianise	1
Rope making	1
Rigging Office	1
	148
Midshipmen	40

SHIPS OF THE NAVY.

Ships of 84 guns	4
——— 70 ———	1
——— 58 ———	1
——— 46 ———	4
——— 40 ———	4
——— 26 ———	1
——— 20 ———	4
——— 18 ———	1
——— 16 ———	1
——— 14 ———	2
——— 12 ———	1
——— 8 ———	1
——— 6 ———	1
Tenders	2
Steamboat	1
	29

Gunboats . . . . 80 carrying one 32-pounder afore, and one 24-pounder abaft, on a swivel.

VII.—CAPTURE OF SLAVE VESSELS.

DURING a period of profound peace, the martial character of our Navy may be said to lie dormant:[*] its objects and pursuits, directed to more tranquil, and consequently less spirit-stirring scenes than in a time of war, present little that is attractive to the general reader, if we except the narratives of those officers who have been employed on voyages of discovery, &c.

The continuance, however, of that offensive traffic—the slave trade—by the Portuguese and Spaniards, occasionally afford opportunities to some of the junior officers of the service to display their gallantry and skill; and to shew that the valiant spirit of the British seaman is innate, not acquired by practice, nor lost from a want of it.

I have been led into these reflections, Mr. Editor, on perusing an account of the gallant conduct of Lieutenant (now Commander) W. Warren, as given in the Jamaica Courant, and which has barely been noticed at home. As such practical lessons of the "olden time" do not often occur, and as the action spoken of is extremely creditable to the abilities, perseverance, and bravery of Captain Warren, and the fine spirits he had to second him in his little schooner, I am sure you will deem the account worthy being recorded in your valuable pages. J.

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[*] The capture of Don Miguel's fleet by the brave Admiral Napier, has taken place since the above was written.

"*Gallant Conduct of Lieut. W. Warren, R.N.*

"We have already stated the capture by H. M. schooner Speedwell, of the *Planetta*, Spanish slave schooner, and also of the *Aquilla*, another slaver, a brig, with 616 negroes; but what will our readers think, when we assert, that the same vessel has added another slave schooner to her list of captures—making a total of 1000 slaves, in the short but unprecedented period of *less than three months!* and we consider we should not be doing justice to the zeal and ability displayed by Lieut. Warren throughout, did we neglect to state a few particulars relative to the capture of the *Aquilla*, one of the largest and most victorious slavers out of the Havana, of 330 tons, with a crew of 70 men, mounting eight 32-pounders, and two 12-pounders, and pierced for 20 guns. The brig had a round stern, which gave her additional advantage over her gallant little opponent. The brig was seen at day-light on the morning of the 3d of June,* and immediately chased by the Speedwell, whose superiority of sailing soon convinced her captain that he had no hopes of escape; on which he shortened sail, and hove to, in man-of-war style, to engage. The details of an engagement at sea would, perhaps, not be of much interest to our readers. Suffice it to say, that after an action of an hour, within pistol-shot, the brig struck her colours to the Speedwell.

"It may be remembered that, a few years ago, Lieutenants M'Hardy, of the Pickle schooner, and Sherer, of the Nimble, were promoted for capturing slavers on this station; and we feel assured, that the determined and gallant conduct of Lieutenant Warren will not escape the favourable notice of our Naval Commander-in-chief, for a more daring and successful combat never took place. The tonnage of the Speedwell† is about 90, while that of the *Aquilla* is 330, and she was fitted out in the most splendid manner, and having a picked crew of 70 men! Yet, notwithstanding this disparity, Lieutenant Warren engaged her, and he was nobly supported by his crew.

"On taking possession, some difficulty occurred as to the disposal of the prisoners; but with men who could perform such deeds of daring, nothing was impossible. The crew was divided between the brig and the schooner; and 70 men placed in irons, by 50 of the true John-Bull breed, and the brig safely navigated to the Havana! On nearing that port, the excitement on shore was very great, to see a "cock-boat" escorting one of the finest vessels belonging to Cuba into port, as a prize; and so annoyed was the Spanish governor at a circumstance which, he said, reflected discredit upon the national character, that the captain has been sentenced to prison for ten years!! This is one way of discouraging the foreign slave trade; but we will venture to say, while Lieutenant Warren has the honour of commanding the Speedwell, that he will be the means of consigning a few more Spaniards to the dungeons of the Morro; but we do hope, that services like his will be rewarded, by giving him the command of a vessel of force, with the *'tother swab on his shoulder*.[‡] Mr. Warren's gallantry is only equalled by his great mildness and diffidence; and we are apprehensive he will not thank us for bringing him so prominently before the public; but our admiration of his gallant conduct impels us to take such a liberty."[§]

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* 1832. † The Speedwell carries 5 guns.

VIII.—Perouse and his Companions.

To the Editor of the Nautical Magazine.

> "To every man who in the service of his country has distinguished himself, whether by a series of brilliant success, or by the sacrifice of his life in less fortunate circumstances, the debt of public gratitude is due, and, in the breast of every real patriot, will be felt and acknowledged."

No person at all alive to the feelings of humanity, and who is an admirer of maritime discovery, will consider the subject of which we are about to take a cursory view, as having lost all interest, from the light thrown on it in the narrative of Captain Dillon's late voyage of research. On the contrary, we think, that what has been accomplished, although bearing unequivocal proofs of the loss of the two French ships under the orders of Pérouse, only serves to raise our expectations, and to increase our anxiety and interest to what has been left undetermined; and that, until the ultimate fate of that great navigator and his companions be ascertained—if that be possible—public sympathy and philanthropy should not be permitted to slumber. The question may be considered abstractedly as belonging to the French nation—unquestionably it does—but let it be remembered at the same time, that humanity and science are attached to no one people in particular; the whole civilized world partakes, as general principles, of the one as a feeling of the heart, and enjoys the other as an acquire-

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[*] Lieutenant Warren was promoted to the rank of Commander in August, 1832.

[†] Our correspondent, like ourselves, has not the pleasure to be acquainted with Captain W.; but, actuated by similar feelings of admiration, he has forwarded us the above interesting account, and we have recorded it.

ment of the mind—in these matters there can be no exclusive monopoly—no national prerogative to the exclusion of general participation.

The enterprise of Captain Dillon, in 1827, has clearly determined the loss of the two frigates, the Boussole and the Astrolabe, with a part of their crews, on a reef of coral rock encircling the small island of Manicolo, situated in 11° 41′ S. and 167° 5′ E., and included in the group denominated Solomon's Islands.*

From the indefatigable research of Captain Dillon, we are put in possession of the painful truth, that both ships struck upon the formidable belt of coral on the southern side of Manicolo, during the night, whilst a hurricane was blowing from N.W. One of the ships drifted off and sunk in deep water, and most part of her crew perished; the other frigate, more fortunate, was driven upon the reef further to the eastward, and many of her company were saved.

The N.W. wind blowing at the time, may be considered as a monsoon, similar to that which is experienced in the eastern part of the Indian Ocean, and probably commences when the sun approaches the tropic of Capricorn, continuing to blow throughout November, December, and January; but we believe, that experience has not yet proved its periodical regularity so far to the eastward, south of the equator; we may not, however, be far wrong in concluding, that the ships were wrecked very near the close of the year 1788. On the 26th of January, 1788, Pérouse anchored in Botany Bay, and sailed thence on or about the 15th of March. His letter to M. Fleurieu was dated the 7th February, from the above place, and he therein states his determination to fulfil the plan he had named in a former letter, of 7th September, 1787, from Awatska in Kamtchatka—to employ six months in visiting the Friendly Islands, to procure refreshments; to examine the S.W. coast of New Caledonia; the island of Santa Cruz; the south coast of the Arsacides; with that of the Louïsiade, as far as New Guinea.

Some doubts had been entertained of the unfortunate navigator's having visited the Friendly Islands, but the information obtained at Tonga by Captain Dillon seems to confirm the probability of his having done so, agreeable with the resolution he had formed; and, indeed, without this corroboration, we think it should be granted, as it may be presumed, that in the run from New Holland to the Friendly Islands, occupying about a month or five weeks, no circumstance short of shipwreck would have deterred Pérouse from prosecuting his original intention. The obtaining of provisions would not probably have detained him more than two or three weeks; and unless he continued to examine that group, his return to the westward to New Caledonia, his next point of investigation, would have been some time in June. As his shipwreck, from the particular wind blowing at the time, may reasonably be considered to have happened late in October, or early in November, more than four months must have intervened between the period he may be supposed to have arrived at New Caledonia, and the loss of the ships at Manicolo. From the description given of the state of the weather at the time by the natives whom Captain Dillon examined, we may be justified in believing, that the unfortunate navigator encountered the "setting in" of the monsoon, which is known to blow with extreme violence. Manicolo, situated to the S.E. of Santa Cruz, (Indenny, of the natives,) although not more than 14 miles long, and 10 broad, where widest, is very high, and may be seen 60 miles off; but, being subject to a thick vapour, it is often obscured from sight.

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* Captain Dillon is of opinion, that it properly belongs to Queen Charlotte's group.

That some of the French lost their lives in an encounter with the natives, there is little doubt, from the information reluctantly given by them to Captain Dillon; and it seems probable, that more than two individuals belonging to the ships remained on the island after the departure of their countrymen, although not clearly so understood from the accounts received. Whether the lamented Pérouse was drowned, or saved, it is impossible to conjecture, as the identity of the ship whose crew reached the shore, was not determined by any of the articles recovered from the natives, or from the reef. The people who were saved, having encamped on the only level spot at all eligible for that purpose, on the west bank of a small river, on the south coast of the island, called Paiou, abreast of the fatal spot on the reef where the wreck of their ship lay, employed themselves for several months in constructing a small vessel, in which they departed, and were not heard of again by the natives.

One of the two white men who remained in the island, died in 1824, and the other quitted it with the chief and his tribe, with whom he had resided, about the middle of the same year; but to which of the neighbouring islands they went, was not ascertained: one of the individuals in question is stated to have been an officer.

It is to be regretted, that when the Prussian, Martin Bushart, and the Lascar, were landed at Tucopia, in 1813, from the *Hunter*, Captain Robson, the circumstance of the shipwreck of the two ships on Manicolo, distant only 40 leagues, did not transpire, as in that case the two surviving Frenchmen would have been found, and the facts of the case fully established fourteen years ago.

It appears that Captain Edwards, of H.M.S. Pandora, sent in search of the mutineers of the Bounty, in 1791, passed at mid-day, between Manicolo and Otooboa, and that he named the former Pitt's Island. Otooboa is in latitude 11° 11′ 18″ S., and in longitude 166° 53′ E., about N. ¼ W., 30 miles from Manicolo. D'Entrecasteaux, who commanded the expedition in quest of

Pérouse, at the same period, passed within 40 miles of Manicolo, in his way from New Caledonia to Santa Cruz, off which island he remained a few days. It was unfortunate that the research was not more diligently performed in this neighbourhood, the very scene of the sad catastrophe, where ended the scientific pursuits of the celebrated and lamented French navigator! There certainly appears to have been displayed throughout this voyage a culpable negligence and want of common humanity, or a deplorable deficiency of spirit and enterprise, in the commanding officer. Our hopes, however, although perhaps not very flattering, of the discovery of the remaining individual who quitted Manicolo in 1824, may yet be realized, as a young man of the name of Stewart was left, by his own desire, at Santa Cruz, by Captain Dillon, from whence he intended to return to Manicolo, for the purpose of learning the language, and endeavouring afterwards to trace out the retreat of the remaining Frenchman. Should this young man's life be spared, and he succeeds in his object, we may expect to have a connected narrative of what passed between the time of Pérouse's quitting New Holland, and the wreck of his ships at Manicolo, a period, it is probable, not far short of eight months. The impediments, however, to the clearing up of this interesting point appear to be so formidable, without more exertion being used than the individual in question may be supposed to be able to employ, that the chances are great against the fulfilment of it, when we consider that the age of the surviving Frenchman must be advanced, and, consequently, that a short time only can pass, before he quits this world for ever. If no means have been taken by the country to whom this unhappy individual belongs, to rescue him, and obtain every information, we can only say that, according to our ideas, a deplorable apathy must belong to the men in power, at whose command alone the object might be accomplished.

We have not read the voyage of Captain Dumont d'Urville, of the Astrolabe corvette, who visited Manicolo a short time (six months) after Captain Dillon had left it, and received similar accounts of the disaster of his illustrious countryman, and brother officer, Pérouse, and therefore we cannot state his reasons for not fully ascertaining the retreat of the unfortunate surviving Frenchman; but, at all events, it seems to have been an opportunity that should not (except from imperative necessity) have been allowed to pass, for determining so interesting a point, and especially as in a short time all hope will be extinct. Captain d'Urville appears to have succeeded in recovering an anchor of 18 cwt., an 18-pounder gun, two swivels, and a pig of lead, from the reef on which one of Pérouse's ships was lost.

It were almost idle to endeavour, by mere conjecture, to trace the route of the survivors, in the small vessel they had constructed, after quitting Manicolo, the scene of their unfortunate disaster; but, a few cursory remarks may be ventured, without presumption.

That they were again doomed to suffer shipwreck, or some disaster more distressing, there can be no room to doubt, but, whether thrown upon some inhospitable shore—buried in the vortex of a tempestuous ocean—perished by famine—massacred by the ferocious inhabitants of some island where they had hoped to relieve their distresses—or drowned on some one of the many detached reefs which lay in their route to a civilized place, will never, perhaps, be determined. To expect that they would have continued, with the slender means they possessed, to fulfil the remaining part of the plan Pérouse had traced out for himself, is entirely out of the question. To reach some one of the nearest ports inhabited by Europeans, or a civilized people, no doubt was their object; and the only matter of difficulty is, to determine which of those ports they would be most likely to steer for. The intricacies of the navigation towards the settlements of Europeans to the south-west, to the west, or to the north-west, seem alike discouraging in a small and fragile vessel. Assuming, that at their departure, probably in the month of May or June 1789, from Manicolo, the trade winds had resumed their ascendancy, the most direct route which offered, in the midst of difficulties, would, we think, be that which leads to the island of Timor, through Torres' Strait, to the south of New Guinea; in pursuing which, the remnant of this ill-fated expedition probably met with one of those marine dangers so common in that part of the ocean, and there terminated their brilliant but unfortunate career.

Vessels sailing in this dangerous ocean from east towards the west, have a greater degree of peril to encounter from coral rocks and shoals, than on a contrary line of course, as it has been ascertained that these dangers have their perpendicular rise, in most instances, to windward, or eastward, in the intertropical parts of the great ocean.* On the contrary, the western side rises gradually from deep water, thereby affording a chance to unhappy mariners who may strike upon it, to reach the dry sand-bank, or, should there be no dry space to receive them, of saving themselves in their boats, the elevated parts of the shoal acting as a break-water.

There is a circumstance mentioned by Captain Simpson, who commanded the trader, *Nautilus*, which, had that degree of attention been paid to it at the time, that it deserved, and which has since attended Captain Dillon's praiseworthy solicitude to ascertain the fate of Pérouse, from the observations and inquiries which an unlooked-for event enabled him to make, the development of the uncertain fate of the French navigator would have long since been known.

In 1806, Captain Simpson discovered some islands to the northward of the New Hebrides, in latitude 11° 17′ S. and longitude 167° 51′ E. On one of these, named Disappointment Island, he put on shore some fowls, sowed several sorts of seeds, and set some plants; an act extremely worthy of imitation, and which at once stamps his character for humanity and philanthropy. He says, that "In two previous voyages I passed this island without the precaution of looking for land, as I am sure many other navigators have done. We found upon it the remains of a very large lower-mast, next the keel, which led us to think some large Spanish ship had been wrecked upon it; but it must have been long since, as the timber was greatly decayed." Captain Simpson does not seem to have recollected the unfortunate Pérouse, when supposing the mast to have belonged to a Spanish ship, as otherwise he would have considered it as appertaining to one of his ships, of which we have little doubt, considering the proximity to the site of his disaster. The islands which he discovered appear to be about 60 miles E.N.E. of Malicolo, a distance not too remote for any part of the wreck of the French frigates to reach by aid of the westerly monsoon, and easterly set of the current during its continuance, and perhaps as little objection may be made to the elapsed time—18 years. The Captain continues: "Though these islands are thinly inhabited, we scarcely saw one in the whole group that had not natives upon it; and when our distance sunk the reefs, which extend from island to island, below the horizon, the natives, as they crossed from one to the other, presented the appearance of a regiment of soldiers marching round the horizon on the surface of the sea. All the islands are exceedingly low, and shew at first, like all the rest of the labyrinth, a few scattered trees above the horizon. This circumstance will demonstrate their danger to seamen, who cannot be too much upon their guard on so perilous a navigation. I am fully persuaded, that not one-hundredth part of these are known to navigators. They appeared to us to be formed of coral and sand, and lightly covered with a thin black soil; the stones on the shore had the appearance of having been burnt: they were black, porous, and light."

The base of these islands, no doubt, are formed from submarine volcanic action; upon which the coralline insect commences its wonderful structure. There are some volcanoes in the neighbouring islands. A fine field lies open here for a voyage of discovery; such an expedition would be of great national benefit, inasmuch as Austral Asia is a rising colony.

Should Captain Simpson be alive, and these remarks meet his eye, he may, we hope, be induced to publish an account of his

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[*] Bonham's Island, (in lat. 5° 48′ N. and long. 169° 56′ E.) enclosing a lagoon on the N.E., is said to be almost a solitary instance of the concave side of a coral formation facing the east.

voyages to the great ocean, or favour the Nautical Magazine with his observations and adventures among the Polynesia, which we are sure would afford gratification to the readers of this work, and be of utility to his brother sailors.

In conclusion, we may also express a hope, that another year will not be suffered to pass without the French nation sending out an expedition to examine the islands which are situated between the meridian of Manicolo and that of Timor, in search of memorials of the ultimate fate of an officer in every respect an ornament of its royal marine, of his country, and of the companions of his voyage.

INVESTIGATOR.

IX.—NOTES ON KEPPEL'S ISLAND, *Lat.* 15° 57′ *S. Long.* 173° 58′ *W. By an Officer of the Zebra.*

POPULATION about 1000. Maátea is the chief of this island: his younger brother and about forty of the natives have embraced Christianity. We found here Mr. Cross, Wesleyan missionary, and Finow, the chief of Vavoa, who had married Maatea's daughter; Finow and his wife are Christians, and the object of their visit was to endeavour to convert Maatea to Christianity. We also found here three men, viz. J. Roberts, a negro, William Brown, and Stephenson, all belonging to the late ship Port au Prince, cut off by the natives at the Hapaees, in 1805. (Vide Mariner, vol. 2, page 80.) These men are quite contented, and do not wish to leave the islands. The conduct of Mr. Cross proves the zeal and exertions of the missionaries. This gentleman went from Vavoa in a small open canoe, to Keppel's Island, in boisterous weather and a turbulent sea. In the month of January previously, in his passage from Tongataboo to Vavoa, he was cast away upon one of the reefs, in a gale of wind, by which he had the misfortune to lose his wife and 29 natives; the body of Mrs. Cross was afterwards found, and buried at Tonga.

Boscawen Island is under the subjection of the chief at Keppel's Island. Here the Zebra found Robert Macguire, a convict, who, with others, ran away with the colonial bark Cypress, from Hobart Town, in 1829. Our readers may probably recollect reading Popjoy's statement, in 1831, with the subsequent hardships the remainder of these ill-fated beings endured, until nearly the whole were either hung, killed, or drowned. The stock on Boscawen's Island is very little. Yams and plantains in abundance, and very fine.

X.—ON THE ADVANTAGE OF CIRCULAR BOILERS, AND THE ESTABLISHMENT OF DUTY* REPORTS, FOR STEAM ENGINES.

To the Editor of the Nautical Magazine.

SIR—The strength of a square boiler may be measured by the transverse strain which the iron plates will bear, before they are bent sufficiently to injure the rivets, the angles, or the studs, which are brought through the boiler to connect fire-places and flues with the top and sides. The fire-place plates seldom stand long, since, being connected with studs to the sides, no room is allowed for expansion; defective rivets become leaky, and, if good workmanship has been employed, the plates twist and crack.

The fire-places and flues in a circular boiler are sufficiently strong, so that no support is required except at the ends, and the whole is at liberty to expand more equally. The strength of these boilers is dependent on the resistance of the iron plates to tension; the flues and fire-place will resist pressure as an arch. These observations apply equally to the simple form adopted in the mines, the modification adapted to steamers proposed by Captain King, the more complex form used in some steam-boats on the Rhine, and the pipe-boilers of steam-coaches.

In the generation of steam, with equally good fire-places, the effect may in some degree be measured by the extent of flue surface in contact with water; and, in this respect, the square fire-place and flues have an advantage, which is, however, more than counterbalanced by the deposition of salt on the flat top of the fire-place, &c. In circular boilers, the deposition takes place in the centre line of the bottom, and is entirely cleared by blowing off.

Thirty lbs. steam above atmosphere is probably a much less comparative strain on a circular boiler than 3 lbs. steam is in the steamer's square boiler: the latter dare not venture to hold what may perhaps be called *middle steam*, such as it is required for expansion, viz. from 10 lbs. to 30 lbs. per square inch, above atmosphere. Allowing 13 lbs. for a steamer's vacuum, the effective power on the piston would be from 23 lbs. to 43 lbs. per square inch—minus, of course, the loss of power occasioned by the wire-drawing of the steam in its passage through the pipes and valves.

On my shewing a sketch of the flues now proposed by Captain King to a mining engineer, who had objected to the Echo's boiler as deficient in flue-room, he at once approved of the new plan, as it combined the advantage of as much flue-room as could be expected, with great facility of cleaning, since a man can enter the boiler, and reach every part with his hands. Steam-boat boilers cannot be made in so simple a form as those on shore, from the necessity of keeping all the flues within the boiler.

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* *Duty* is a term used in the mines for the work performed by the engines; it is expressed by the number of million pounds of water lifted one foot high by the consumption of one bushel of coal, and is calculated by the formula introduced by James Watt, at the time of his patent, when he received from the Cornish mines one-third of the coal saved by his engines, as compared with Newcomen's.

The common arrangement of the flues of a mining boiler of 37 feet long, are a fire-place 4 or 5 ft. long, in a large circular tube at one end: with this a smaller tube, 31 ft. long, is connected, which passes through the boiler, for a flue; the flue is returned under the boiler 36 ft.; it is then divided, and is again returned on both sides, 36 ft. each; so that the heat is in contact with the water for a space exceeding 100 feet. The under and side-flues are built of brick, similar to those used in greenhouses; the boiler's plates, of course, forming one part of the flue.

In my first letter, the situation of the cinders and sawdust is not explained: the cinders are over the brickwork, and the sawdust covers the steam-pipes belonging to the boilers. A circular boiler for Crenver (this was, I believe, of smaller diameter than commonly used) was tried by a forcing-pump, with a pressure of 300 lbs. per square inch: this trial, though not too much for the plates, proved rather too severe for the rivets, which at that time were often made one-eighth of an inch too small for the holes, so that any variation in drilling might not injure the plates in riveting. When in use it continued leaky, though it bore, without injury, the explosion of the boiler alongside; which explosion, like all others that have occurred in the mines, can, I believe, be traced to neglect. One hundred pounds per square inch is not an uncommon trial.

This trial, with boiling water, might be advisable in steamers, and steam might be used aferwards in them as low as can be worked expansively to advantage. Probably the most direct proof of the advantage of the expanding of steam is, the alteration of an ore-stamping engine at Poldice, which was made at the suggestion of Captain King. The cylinder was 26 inches in diameter, and stroke 6 feet, working with 20 lbs. steam above atmosphere, and turning, by means of a crank, a wooden cylinder, with wipers, which lifted the stamp-heads. As soon as the steam was used two-thirds expansively, the saving of coal amounted to one-third, and it was not found necessary to increase the strength of the steam. No other alteration was made in the engine, which is, at least, 20 years old. On referring to a Duty-report, the question will certainly be asked why the engines employed in stamping ores perform so low a duty? The answer must be, Those reported do not use steam expansively; are imperfectly, if at all, clothed; are old slop-work engines of 15 or 20 years' standing; and bear the same relation in quality to the best pumping or steam-boat engines that an Irish post-chaise does to a London-built gentleman's carriage. Their smaller size, and mode of working, will inevitably shew an inferiority, but probably not always to the present extent.

I am indebted to the kindness of two gentlemen who respectively are shareholders in the Herald and Cornubia for the following comparative table. Both vessels, and their engines, were built at Greenock by Messrs. Scott and Sinclair, and from nearly similar lines. The allowance of coals per hour probably includes the whole time of the voyage, or while the steam is up, from Bristol to Hayle, and London to Falmouth:

	Herald. 90 horse-power.	Cornubia 80 horse-power.	Welch Coal used.	Herald.	Cornubia
Cylinder in inches ...	39½	33	Revolutions	25	25
Stroke in feet	3 ft. 9	3 ft. 6	Sometimes reduced to	15	18
Steam in lbs. above atmosphere	5 lbs.	11 lbs.	Number of Boilers ...	1	3
			Fire-places.	4	3
Includg. Vacuum, 13lbs	18 lbs.	24 lbs.	Length	19 ft.	17 ft. 6
Length of Paddles, ..	7 ft.	6 ft. 9	Width, or Diameter..	15 6	4 4
Outer diameter of paddle-wheel	16 ft.	15 ft.	Coal per hour, average	900 lbs.	5 cwt.
			Builders' tonnage	207 tons	160 tons
Width of ditto......	1 10	1 11	Cargo in tons	70	70
Number of ditto	15	14	Weight of boiler in tons	30	not mentioned.
Speed, greatest......	8¾	9			

Less boiler-room is found as effective, and this may be used either as cargo or coals. The Herald works her cylinder full of steam; the Cornubia works her steam one-half expansively, that is, the cylinder only one-half filled with steam. The engine is fitted with a common sliding-valve, but has an additional double-seated valve on the steam-pipe, which cuts off the steam at the half-stroke. The quantity consumed at each stroke is,

Cylinder in inches. Stroke in ft. ft. in. Cubic ft. of steam. lbs. per sqr. inch. Vac.

$$\begin{array}{ll} \text{Herald....} & \overline{39\tfrac{1}{2}}^{\,2} \\ \text{Cornubia..} & \overline{33}^{\,2} \end{array} \times \cdot 7854 \times \begin{array}{cc} 3 & 9 \\ 3 & 6 \end{array} = \text{about} \begin{array}{c} 31 \\ 10 \end{array} \text{ of } \begin{array}{c} 5 \\ 11 \end{array} + 13 = \left.\begin{array}{c} 18 \\ 24 \end{array}\right\} \text{effective steam.}$$

$$\left.\begin{array}{l} \text{In the Cornubia the first half-stroke is........ } 24 \\ \text{———— The second half-stroke averages } 18 = 21 \text{ average.} \\ \text{Herald .... } 18 \text{ ......} \end{array}\right\} \text{effective power.}$$

My observations are not addressed to scientific readers, or many of these details might be useless. My *aim is to excite inquiry only*. In using steam expansively ½, as the cranks work at right angles to each other, each engine alternately employs full steam during a ¼ revolution, and exerts a diminishing power on the ensuing ¼ revolution of the paddle-wheels. How far expansion may be carried is, perhaps, rather a question of practice than theory. During fine weather, in attendance on a fleet, a much greater expansion may be found useful, instead of the employment of the throttle valve to wire-draw the steam, which wastes a large quantity, and produces no effect. In two engines lately erected in Cornwall, the steam-valve is arranged to work $\frac{7}{8}$ expansively; but allowing the utmost time for closing the valve, $\frac{6}{7}$ expansion is obtained in the cylinder. In Borlase's engine, when it works 7 strokes per minute, the steam-acting stroke is perhaps three seconds, so that the valve is opened about half a second. In the other engine, I have been amused at the surprise of a gentleman who could hardly credit that an iron beam of 26 tons could be moved by the *hop of a valve* which the eye could scarcely follow. Two eighty-inch cylinder engines are now building for Sims at Perran, to expand their steam in a similar manner. One for a new mine will be lightly loaded at first; as the mine deepens, the load will increase, and more, or stronger, steam will be admitted into the cylinder. The beneficial effect of this plan is evident, were no other advantage obtained than the convenience of adapting the power to the required work. It will be found equally advantageous to steamers to be enabled to vary the power of the engine at pleasure.

The first voyage of the Echo afforded proof of this advantage of circular boilers. I understand she was working 10 lbs. steam off the north coast of Spain, blowing hard. The sea was sufficiently high to make it *untoward* to wear a 10-gun brig like her. She was stayed by the order, "Raise the steam to 15 lbs. per square inch," though with difficulty. Twenty lbs. would have done it in good style.

I would prefer shaking a vessel to pieces with 40 or 50 lbs. steam in beating off a lee shore, rather than laying her bones on the beach; and should feel no alarm for the boilers, though I might for the paddles. The high-pressure might keep the water in the boilers quiet in a sea. The reserve of power possessed by engines using steam expansively is so great, that, if one engine is injured, by giving the other full steam, the power to propel the vessel is perhaps not materially lessened.

But it is extremely necessary to guard against the abuse of such power. A Duty-report is probably the most efficient check, by directing the attention of engineers and officers to a small consumption of coal in proportion to the work performed, rather than to great speed through the water, as the only object of attention; it would likewise give the commanding-officer information of the proceedings of the engineers, or, as they are more properly termed in Cornwall, engine-men, and soon place them in their proper subordinate situation; perhaps they require a tight hand, and severe curb. The information necessary to control them effectually is possessed by few, and never will be generally obtained unless a duty-report is made in such a manner, that the work done by the engine cannot be misunderstood. I consider it, in fact, a question, whether steam-boat commanders are to become masters, or remain servants, to their engine-men.

In regard to clothing engines, probably wood-ashes, as first proposed by James Watt, will be found effective; in the mines where space and weight are no object, any non-conductor of heat may be used, and the advantages gained by it are too decided to admit of dispute. Wilson's engine at Wheel Towan, erected by Grose, was worked for six hours, I believe, under the inspection of Sir John Rennie, who was sent into Cornwall by the late Admiralty. No public statement, with his authority, of the work performed has ever appeared, nor should I place much dependence on it, since I know that that engine underwent a much more accurate and severe trial under the jealous inspection of most of the rival mining-engineers of the county. The result was, most of their engines were clothed, as far as practicable, with old fittings, within a few months; and the only whisper heard against its performance was, that it had had a *very liberal supply* of grease during the trial:—stronger proofs of success I do not require.

Lately, in new cylinder-bottoms, a circular groove is cast, to catch the grease from the piston, and a cock is placed to take it out of the cylinder, and it is reworked continually. If the engineers and adventurers take my advice, they will in future require the following conditions to be complied with, before they consent to allow a trial of their engines:—That a public statement be made of the observed duty, and that the trial shall extend to at least twenty-four hours, with seals on the doors of the boiler-house. No persons more readily allow the excellence of the workmanship of the working part of steamers' engines. I have heard an enthusiastic description of the beauties of the condensing apparatus of the engine in one of the government packets, when making fifty strokes per minute, from the foreman of one of the foundries. It is to the weakness of the boilers, and the application of steam in the cylinder, to which they object; and it is singular, they are themselves liable to the latter charge in many instances, in the application of steam, when a crank is used in the engine. Their feelings are similar to those with which the builders of smuggling cutters viewed the dock-yard attempts at such craft in the last century. Perhaps a late writer in the Quarterly Review is correct in his assertion relative to workmanship of engines: he seems, however, unacquainted with the practical alterations in use in Cornwall, though I do not consider, with him, an East India voyage direct so impracticable. Circular boilers, large valves, and expansive steam, (plans in use on the largest scale in the mines,) combined with a competition properly directed, would soon bring these views to the only test, that of experience. Other boilers, and differently-formed engines, may succeed still better; and they have my good wishes for their success. A few years' experience would point out the strength of steam, and amount of expansion, which would give the highest duty with the requisite speed. A scientific inquiry into what is already known, or at least an examination of Cornish engines, as compared with Tredgold's Tables of Steam-engines, and into the effect of a varying power on the piston employed to move a crank, might at first prove a useful guide.

In this county, a continued improvement is anticipated, and in one engine every nerve is strained to *exceed* 100 millions duty for twenty-four hours. Ninety-nine millions has been done one day, fairly, I believe; 100 millions has not been reached, except on those days the fire is let out, and the engine stopped for cleaning; and this advantage is more than lost when the fire is again lighted: half an hour stoppage is observed to decrease the duty about two millions on the day's work. These facts are mentioned, to point out the accuracy, or, I should say, the attempted accuracy, of which a duty-report is supposed to be capable: though probably it is correct for the comparison of each day's work of the same engine. In the mines, an additional report of pit-work is required; unfortunately the escape of water by the side of the plungers increases the amount of the engine's duty, but flat rods and diagonal shafts increase friction; so that, though I would preserve the present column of duty, I would add another, with allowances for or against the engines, expressed in figures. Innumerable scientific objections may be urged against a steam-boat duty-report. I will answer only for its practical success by the honourable competition it will excite among civil engineers, and the means it will afford of bringing new schemes to at least a fairer test than the opinion of uninformed or interested parties—perhaps no definite measure of the power of engines can be obtained by calculation!—and I should feel most disposed to trust only to a fixed proving-machine, constructed to shew the power in tons exerted by the engine when the steam-boat is attached to it.

JOHN S. ENYS.

Enys, 27th July, 1833.

XI.—A LIST OF SHIPS AND VESSELS BELONGING TO THE PORT OF HONORURU, *Island of Woahoo, October*, 1831.

Name.	Tonnage.	Owners.	Trade employed in.
Louisa	300	French & Co.	California.
Volunteer	250	Ditto	Sitka.
Diana	250	Ditto	Russian Settlements.
Dhaulle	180	Cole & Co.	China.
Chinchilli	140	French & Co.	Gaymaz.
Crusader	130	Hinkley & Co.	Kamtschatka.

Name.	Tonnage.	Owners.	Trade employed in.
Blanshard	80	Blanshard & Co.	Feejee Islands.
Truro	30	Jones & Co.	Shell Islands.
Washington	60	Ditto	Gulph California.
Convoy	130	Grimes	St. Francisco.
Waverley	130	Native Chiefs	Packet.
Karamoku	140	Ditto	Eromanga.
Tamarahana	140	Ditto	No employ.
Vancouver	70	Captain	Columbia River.
Nio	230	Ditto	No employ.
Griffin	180	Cole & Co.	Nort West Coast.
York, and 10 small Vessels, amounting to about	450	Private Individuals	Collecting TortoiseShell, Beche de Mer, and carrying Salt.
Total	2890		

LITERARY AND SCIENTIFIC NOTICES

CHARTS.

The Strait of Gibraltar, by Captain W. H. Smyth, R.N., K.S.F. Size, Half Double-Elephant. Admiralty.

> This Chart includes the European Coast between Gibraltar and Mecca Tower, and the African between Ceuta and Cape Spartel to the westward. It will be a valuable chart for vessels passing through the Strait. We observe a note, stating, that at a point to the S.W. of the Cabezos, the Spanish Charts have a bank of 7 fathoms, a mile in extent, where Captain Smyth found deep water. We had a better opinion of the Spanish Charts than this would authorize.

Gibraltar, by Captain W. H. Smyth, R.N., K.S.F. Size, Half Double-Elephant. Admiralty.

> This is a beautiful plan of the rock of Gibraltar, on a scale of more than six inches to the mile. It includes, on the land side, as far as the ruins of the Spanish lines, and gives the various details of the rock very distinctly.

Toulon, and the adjacent Coast. From French Documents, with additions, by Captain W. H. Smyth, R.N., K.S.F. Size, Half Double-Elephant. Admiralty.

> Includes the Coast between the Porquerolles and the whole Headland of the well-known Cape Sicie, on the capital scale of an inch to the mile.

The Coast of Barbary, from Cape Carbon to the Fratelli Rocks.

THE NORTH COAST OF AFRICA, from Ras al Halal to Alexandria.

THE HARBOUR OF ALEXANDRIA.

THE COAST OF TUNIS, from Africa City to the Fratelli Rocks.

The foregoing Charts by Captain Smyth, published some time ago by the Admiralty, have received some very valuable additions in the shape of Plans of Harbours and Anchorages on the Coasts, Soundings, and Views, all of which cannot fail to render them more desirable and useful to the navigator.

SPLENDID DISCOVERY.—Mr. Rutter, of this town, already known as the author of a Treatise on Gas Lighting, has obtained a patent for a new method of producing heat; which is certainly one of the most useful discoveries of modern science. In large furnaces and manufactories it will almost entirely supersede the use of coal. But its greatest advantages will be found in its applicability to steam-navigation. The principal ingredient employed for fuel in this new process, is water. The only material required besides, is something in a liquid form, which contains a large portion of carbon; whale oil, tar, or almost any thing of a similar kind, will answer the purpose. As the materials are introduced into the furnace simultaneously, and in combination with each other, the one yields its carbon while the other gives out its hydrogen, and a small portion of atmospheric air is the only thing that is then required to keep them in a state of perfect combustion. The whiteness and intensity of the flame thus produced can hardly be imagined by any one who has not yet seen it, and yet it is so completely under management, that in one second it can be reduced or augmented as occasion may require. It is almost unnecessary to add, that it yields no smoke, and consequently the hideous funnel now used in steam-packets may be laid aside. But the greatest advantage of all is, that steam-navigation may henceforth be employed in cases where, till now, it was altogether impracticable. A vessel may be so constructed as to take on board, without inconvenience, a supply of fuel, which would enable her to circumnavigate the globe.—*Salisbury Paper*.

NEW HALF-TIDE CHANNEL IN THE RIVER MERSEY.—We feel great pleasure in being able to congratulate the enterprising merchants and ship-owners engaged in the trade of this port, on the success which has attended the exertions of Lieut. Denham, aided by Lieut. Robinson, (who was deputed by the Board of Admiralty to make a survey of the river,) in ascertaining the existence of a new half-tide channel, at once affording the most invaluable and increased facility of navigation in the approach to the port of Liverpool. It is scarcely possible to attach too much importance to the result of the interesting and unwearied labours of these gentlemen, who have been most indefatigably engaged in their surveys since the period of their arrival in Liverpool. We are informed, that the advantages stated to be comprised in the discovery of this new half-tide channel are these: that a maritime intercourse may be pursued at all hours, and that a channel to seaward is progressively forming, which affords, at the present time, twelve feet water at two hours' flood, and seventeen feet at half-tide; that a ship coming in with an easterly wind can stand up the Crosby Channel, approaching from the northward, at as early a period of the tide as the Rock Channel affords. Considering that Liverpool is about to enter on a new era in the employment and extension of her trade and shipping to China, we hail this boon as the more welcome, coming, as it does, at a period when vessels of a large size are likely to be engaged in the China trade, and when every species of increased facility and security to navigation generally, will be not only required, but called most fully into action.—*Liverpool Standard.*

Iron Steam-Boats.—Vessels constructed of sheet-iron have been sometimes tried in this country, but it does not appear that any essential advantage was gained by the change, as the use of metal for wood has never extended beyond the first experiments, except for track-boats on canals, where the lightness of the structure seems to have recommended its adoption in some cases. In warm climates, however, the case is different; the superiority of iron over wood is there evinced in many essential circumstances, and it is so decided, that, in the course of time, it must cause a total revolution in the ship-building of these countries. The great changes, from excessive drought to heavy rains, which take place in hot climates, have a powerful effect in destroying the joinings and frame-work of the best built ships, as well as in wasting their timber. Sometimes, during wet seasons, the rains pour down for days together, till the whole decks and frame of the vessel are soaked with moisture; the sun immediately after breaks out with a strong cloudless heat, and the planks, which had been swelled with wet, now shrink from the penetrating drought, till their joints separate from each other, and leave large gaps and seams. During the next heavy shower, perhaps, these give free entrance to rain, and the cabins below are frequently deluged, in such cases, like an open shed. This takes place particularly on the coast of Guinea, but it is felt to a painful extent by all coasting vessels in tropical climates. This, however, is not the only inconvenience: wood, it is well known, is a bad conductor of heat, so that whatever warmth is generated within a wooden vessel, is likely to remain there, and even to increase, within certain limits, so long as the cause continues to operate. The breath of the sailors, therefore, when they sleep below decks, and the heat communicated through the planks by the vertical sun, frequently make the hold of a ship in warm climates so insufferably hot, that it is almost suffocation to remain in it; and though there are contrivances (called windsails) which are used to send down a current of cool air, the heat and effluvia are still injurious to health. The same warmth, however, which is hurtful to mankind, makes the hold of these vessels a favourite shelter for all the noxious vermin of hot climates: scorpions, centipedes, rats, cockroaches, and all abominations, delight in their recesses. Henry Martin, a well-known and benevolent chaplain of the East India Company, who made a short passage in one of the native vessels, could compare it to nothing, on this account, but a sepulchre full of every thing unclean and poisonous. The unpacking of boxes which have been any time on board of such craft is sometimes a work of great danger, and a person has to stand by with a sharp instrument to prick the scorpions to death. The vermin are sometimes killed by introducing a tube from a steam-boiler, and filling the hold (which is well closed down in the mean time) with hot steam: this kills them, and boils them down to a pulp; but the vessel requires much cleaning afterwards. The chief cause of the preference shewn by such vermin to the holds of ships, is the heat generated in the confined atmosphere, which the non-conducting properties of their wooden sides do not allow to escape. All this would be avoided by having vessels constructed of iron; that metal is so complete a conductor, that the heat generated within the hold would be transmitted instantly though the sides of the ship, and abstracted by the cool sea water; so that the interior air of the vessel, instead of being kept at a suffocating heat, would never become warmer than the surrounding water.

This result is not matter of conjecture or speculation; the experiment has been tried in steam-vessels on the Ganges, and found to answer perfectly; and it is also now under trial in the case of the steam-boat which went out with Mr. Lander to explore the river Niger, and its eastern tributary, the Quorra. Accounts have been received from this interesting expedition, which dwell particularly on the advantages derived from the coolness of their metal steam-vessel, and her capability of resisting the effects of a tropical climate. Indeed, had it not been for this invention, it seems likely that the heat generated by steam-engines would have been a complete bar to the employment of that power in warm climates, at least in vessels coasting along the hot sultry shores and rivers, where the health of European seamen already suffers sufficiently from the temperature. It is singular to consider how science enables mankind to defy the extremes both of heat and cold, and to carry on their enterprises in safety, under the pole or the equator. When our ships were sent to make discoveries near the pole, they were lined with non-conductors, cork and double planking, in order to preserve within them all the heat that was generated either by the people or by the necessary fires; while, under the equator, on the other hand, where the heat is in excess, ships are made entirely of a conducting substance, in order to carry away the heat as fast as it is generated.—*Chambers's Journal.*

BATTLE OFF CAPE ST. VINCENT. By R. H. Essex. Dickinson, Bond Street.—This is the only plan we have seen, representing the position of the rival fleets of Don Pedro and Don Miguel, in the late action off Cape St. Vincent. It also shews the situation of the prizes, as they lay afterwards in Lagos Bay, and contains a description of the manner in which the ships of Admiral Napier's fleet bore down, and took up their positions. Although a rough sketch, it shews satisfactorily the manner in which this brilliant affair was achieved.

THE FALLS OF ST. JOHN, New Brunswick.—On Sunday, August 31, 1832, the brig Caroline, (155 tons,) Captain Henry, passed through the falls of St. John's river, New Brunswick, to Indian Town, with a cargo of coals for the steam boats, which ply from the above-named place to Frederickstown. A number of gentlemen accompanied Captain Henry in the expedition. This, we understand, is the first instance of a loaded vessel going through these falls; and the attempt has hitherto been considered as a matter of fearful enterprize. We understand that the inhabitants of Indian Town intend to present the captain with some ostensible mark of their approbation. Anything which tends to develop new sources of industry, in the saving of time and labour to the public, ought very properly to be rewarded.—*Jamaica Paper.*

The following NOTICE *may be serviceable to those Mariners who visit* AUSTRALASIA, *as a caution against eating the fish described.*

Among the embellishments of the Hobart Town Almanack for 1832, is a representation of the toad fish,[*] in consequence of the partaking of which, a lady and two children died lately at the above-mentioned place.

"The poison is of a powerful sedative nature, producing stupor, loss of speech, deglutition, vision, and the power of the voluntary muscles: and ultimately, an entire deprivation of nervous power, and death. At the inquest over the above bodies, the effect of the poison was satisfactorily proved, by giving part of the fish left by the unfortunate individuals to two cats, which soon became affected. When both were in a dying state, one had twenty-five drops of the arsenical solution insroduced with a silver tube into the stomach, and rapidly recovered; while the other, which was allowed to take its chance, quickly died. The bodies at death were flaccid and blanched, with no fœtor, but rather a smell like that of new hay, particularly about the mouth; but in about twelve hours they became livid, swollen, with bloody serum issuing from all the external parts, intolerably fœtid, and rapidly running into decomposition.

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[*] *Rana piscatrix.* See also Nautical Magazine, No. 4, p. 177, for an account of the toad-fish of the Sargasso Sea.

"The general size of the fish is about five inches in length, the girth is great in proportion to the length, the back is of the colour and spotted like the tortoise-shell, the belly is of a white kid-skin feel and appearance. The animal has one central fin posterior to the anus, one caudal, and two pectoral. The tail is perpendicular, the gills are anterior to the pectoral fins, and are about three-eighths of an inch in length, and of a semi-lunar form; the eyes are rather large and prominent, like those of he toad; the nares are anterior to the eyes."

MAGNETIC INTENSITY INSTRUMENT.—At the last meeting of the Royal Society, we had an opportunity of seeing the apparatus of Mr. Snow Harris, for obtaining observations of magnetic intensity *in vacuo*. This is by far the most perfect for making these observations, that we have yet seen. The needle was suspended by a silk fibre passed through a small hole in its centre, and was allowed to oscillate at the bottom of a glass tube, from which the atmospheric air had been previously exhausted by an air pump. By vibrating the needle *in vacuo*, Mr. Harris is enabled to get a great number of vibrations in small arcs, the intervals of time of an equal number of vibrations during the same observation, being also nearly similar. The greatest arc used by Mr. Harris, is 5° on each side of zero, while by some observers an arc of 30° is used.

We were much pleased with the whole arrangements of Mr. Harris for making this delicate and difficult observation, and two principal features struck us as being peculiarly adapted to secure accuracy.—It is usual, with most observers, the needles being fitted for the purpose, to change the centre of the needle, to compensate for the change of the dip in different parts of the earth's surface, so as to preserve the horizontal position of the needle. This is considered, by Mr. Harris, as highly objectionable, inasmuch as it completely alters the condition of the needle. In order to obviate this, he keeps two small pieces of platinum, one on each side of the centre, and by shifting their distances from it, he preserves the horizontality of the needle under all circumstances. The process adopted by Mr. Harris, of finding this condition, was new to us, and we believe it must be also to many observers. He takes a basin of water, coloured with indigo, (or any thing else,) and suspending the needle over it by its thread, he observes, whether the needle and its shadow on the surface of the water are parallel. If they are so, the needle must be horizontal as the surface which reflects the image is so, but if it be inclined to the horizontal position, the angle at which it is inclined is doubled by reflection, and rendered at once conspicuous. Indeed, an experienced observer might contrive to see a contact between the needle and its shadow, without allowing the former to touch the surface of the water.

In commencing his vibrations in a certain arc, Mr. Harris uses a pair of arms which embrace the needle on each side, and holding it at the extent of the arc, lets it go instantaneously. The common method is to apply a magnet, and, by withdrawing it suddenly, the needle commences its vibrations.

Mr. Harris also proposes to ascertain comparative observations of the force of gravity, by the vibrations of a bar of metal, in a very simple and ingenious manner. He suspends the bar at the middle by two parallel threads, and observes the number of vibrations through a certain arc in a stated interval of time. This interval always being the same, the number of vibrations will vary, according to the force of gravity at the place where the observation is made.

A new electrometer was also shewn by Mr. Harris, of his own invention, which indicated very distinctly, the presence of the minutest quantity of electricity.

NAUTICAL MISCELLANY.

NAVAL INTELLIGENCE.

The Royal Navy in Commission.

⁂ S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

Actæon, 26—Hon. F. W. Grey, 15th July, at Constantinople.

Ætna, S. V. 6—Com. E. Belcher, 18th Aug. arr. at Spithead, having completed the survey of the Esquerques. Left Oporto 10th Aug. 19th entered harbour to refit.

African, St. V. — Lieutenant J. Harvey, 29th July arr. at Falmouth; 9th Aug. sailed for Oporto.

Alban, St. V.—Lieutenant A. Kennedy, 25th June sailed for Milford.

Alfred, 50—Capt. R. Maunsell, 12th June sailed for the Levant; 29th July at Malta.

Algerine, 10—Com. Hon. J. F. F. De Roos, 18th May arr. at Rio from Bahia; 23d May and 6th June at Rio.

Alligator, 28—Captain G. R. Lambert, 25th February, left Trincomalee for Madras.

Arachne, 18—Com. W. G. Agar, 26th May, at Barbadoes.

Ariadne, 28—Capt. C. Phillips, 5th July arrived at Havana; 7th July spoken in 23° 40′ N. and 82° W. on her way to Bermuda.

Asia, 84—Rear-Admiral Sir G. Parker, C.B., Capt. P. Richards, Tagus, 5th Aug.

Astrea, 8—Capt. W. King, Falmouth, superintendent of Foreign Packets.

Athol, *Troop Ship*—Mr. A. Karley, 19th Aug. arr. at Spithead with troops from the West Indies.

Badger, 10—Com. G. F. Stowe, Simon's Bay, 28th May; 23d May arrived from Mauritius.

Barham, 50—Capt. H. Pigot, 18th June sailed for the Levant; 24th June arrived in Basika Bay.

Beacon, S. V.—Com. R. Copeland, Archipelago.

Beagle, 10, S. V.—Com. R. Fitz-Roy, South America, surveying.

Belvidera, 42—Capt. Hon. R. S. Dundas, 22d and 31st July off the Douro; 10th Aug. at Oporto.

Blanche, 46—Capt. A. Farquhar, K. H. C. B. 16th June left Barbadoes for Trinidad. Expected home daily.

Brisk, 3—Lieut. Stevens, 15th June at the Gambia; arr. there 14th.

Britannia, 120—Vice-Admiral Sir P. Malcolm, Capt. P. Rainier, 12th June sailed for the Levant; 24th June arr. in Basika Bay; 3d July sailed for Samos.

Britomart, 10—Lieutenant H. Quin, 8th June arrived at the Gambia. 14th sailed for Sierra Leone.

Buffalo, *Store Ship*—Mr. F. W. R. Sadler, *Master*, 12th May sailed for New South Wales.

Caledonia, 120—Captain T. Brown, 8th Aug. sailed for Cork, with detachments of 89th Regiment; arr. 10th.

Carron, St. V.—Lieut. Com. J. Duffill; Woolwich.

Castor, 36—Capt. Rt. Hon. Lord John Hay, 22d and 31st July off the Douro; 10th Aug. at Oporto.

Ceylon, 2.—Lieut. H. Schomberg, Malta.

Challenger, 28—Capt. M. Seymour, Portsmouth, fitting.

Champion, 18—Com. Hon. A. Duncombe, 10th June sailed for Alexandria.

Charybdis, 3 — Lieut. Com. R. B. Crawford, at Ascension 19th June.

Cockatrice, 6—Lieut. Com. W. L. Rees, Rio Janeiro.

Cockburn, 1—Lt. Com. C. Holbrook, Kingston, Lake Ontario.

Columbia, St. V. 2—Lt. Com. R. Ede, 10th July arrived at Gibraltar; 19th Aug. arr. at Falmouth. Left Malta 1st, Gibraltar 8th, Cadiz 9th Aug. Put into Brest for coals, and left on 19th.

Columbine, 18—Com. O. Love, 22d May at Halifax, refitting.

Columbine, St.V.—Lieut. R. Ede, 10th July Left Falmouth for Mediterranean.

Comet, St. V.—Mr. T. Allen, 17th Aug. sailed for Hamburgh, for the Princess Lieven.

Comus, 18—Com. W. Hamilton, 15th April spoken in lat. 28¼° N. 42½° W.

Confiance, St. V. 2—Lieut. Com. J. W. Waugh, 1st Aug. arrived at Plymouth, with the news of the capture of Lisbon by the troops of Don Pedro.

Conway, 28—Captain H. Eden, 20th July sailed for Lisbon; 26th arrived; 3d Aug. sailed for Rio Janeiro.

Cordelia, 10—Com. C. Hotham, 20th May sailed for Corfu.

Curaçoa, 26—Capt. D. Dunn, China Seas.

Curlew, 10—Com. H. D. Trotter, 9th May captured a vessel with 290 slaves on board, off Fernando Po.

Dee, St. V. 4—Com. W. E Stanley, (*b*) Hamoaze. Arrived 20th July, with Rodney, from Milford. 8th Aug. sailed from Plymouth for Cork, with part of 89th Regt.; arrived.

Dispatch, 18—Com. G. Daniell, 26th April arr. at Barbadoes from Trinidad; 15th May at St. Thomas's from Tortola.

Donegal, 78—Capt. A. Fanshawe, 5th Aug. in the Tagus.

Dromedary—R. Skinner, Bermuda.

Dublin, 50—Capt. Rt. Hon. Lord J. Townsend, 28th March arrived at Callao.

Echo, St. V. 2—Lieut. Com. R. Otway, 12th Aug. in the Douro.

Endymion, 50—Captain Sir S. Roberts, Knt. C.B. Hamoaze, fitting.

Excellent, 58—Capt. T. Hastings, Portsmouth.

Fair Rosamond, *Schooner*—Lieut. Com. G. Rose, 5th Aug. in the Tagus.

Fairy, S. V. 10—Com. W. Hewett, surveying in the North Sea.

Favorite, 18—Capt. J. Harrison, captured a schooner with 117 slaves. 10th May left Fernando Po for England; left Sierra Leone 30th June; 19th Aug. arr. at Portsmouth; 20th Aug. into harbour.

Firebrand—Lt. W. G. Buchanan, Woolwich.

Firefly, 2—Lieutenant J. M'Donnel, Bahamas.

Firefly, St. V.—Lieut. T. Baldock, 27th June arrived at Falmouth. Passenger, Capt. Morgan, R.N.

Flamer, St. V. 6—Lieut. R. Bastard, 24th July arr. at Portsmouth, from Falmouth; arrived there 18th. Woolwich.

Fly, 10—Com. P. M'Quhae, 17th April sailed from Havana.

Forte, 44—Capt. W. O. Pell, 9th Aug. into the Sound; 17th sailed for Halifax, with Pyramus in charge.

Gannet, 18—Com. J. B. Maxwell, 13th June left Barbadoes for Jamaica, having arrived the previous day from Maranham.

Griffon, 3—Lieut. E. Parlby, 2d May, Fernando Po.

Harrier, 18—Com. H. L. S. Vassal, 25th Oct. arr. at Madras from Calcutta.

Hermes, St. V.—Lieut. J. Wright, 28th July arr. at Plymouth; 30th sailed for Falmouth.

Hornet, 6—Lieut. F. R. Coghlan, running between Monte Video and Rio Janeiro.

Hyacinth, 18—Com. F. P. Blackwood, 29th May arrived at Madeira; 2d June sailed for Cape.

Imogene, 18—Capt. P. Blackwood, 1st Feb. arrived at Sydney; 13th sailed; 23d Feb. returned to Sydney.

Investigator, 16, S. V.—Mr. G. Thomas Shetland Islands, surveying

Isis, 50—Captain J. Polkinghorne, 24th March at Mauritius.

Jackdaw, S. V.—Lieut. E. Barnett, 14th June arr. at Nassau.

Jupiter, *Troop Ship*—Mr. R. Easto, 28th Feb. arrived at Rio Janeiro; 8th March sailed.

Kangaroo, 3—Lieut. F. Gilley, 26th May at Jamaica.

Larne, 18—Com. W. S. Smith, 10th May sailed for West Indies.

Leveret, 10—Lieut. W. F. Lapidge, 7th July off Oporto.

Lightning, St. V.—J. Allen, Woolwich.

Madagascar, 46—Capt. E. Lyons, 17th June arrived at Smyrna, with Otho, king of Greece, on board.

Magicienne, 24—Capt. J. H. Plumridge, 12th Feb. arrived at Calcutta.

Magnificent, 4—Lieut. J. Paget, Port Royal.

Magpie, *Cutter*—Lieut. J. Moffat, 26th July arrived at Portsmouth, and sailed for Falmouth.

Malabar, 74—Capt. Hon. J. Percy, 13th June sailed for the Levant; 15th July at Constantinople.

Mastiff, 6, S. V.—Lieut. T. Graves, Archipelago.

Melville, 74—Vice-Admiral Sir John Gore, K.C.B., Capt. H. Hart, 25th April at Bombay.

Messenger, St. Transport—Mr. J. King, Portsmouth station—attending on the Duchess of Kent.

Meteor, St. V.—Lieut. Symons, 17th June sailed from Malta for Levant; July, Archipelago.

Minx, 3—Lieut. J. Russell, 20th May at Jamaica, from Nassau.

Monkey, —Lieut. ———, 26th May at Jamaica.

Nautilus, 10—Com. Rt. Hon. Lord G. Paulett, 12th Aug. in the Douro.

Nimble, 5—Lieut. C. Bolton, 30th March captured the Negrita slave-vessel off Cuba, with 200 slaves on board, from river Bonny; 26th May at Jamaica.

Nimrod, 20—Com. Rt. Hon. Lord E. Russell, 24th July, off Oporto 31st; 10th Aug. at Oporto.

North Star, 28—Capt. Lord W. Paget, 21st July arrived at Spithead; 25th Portsmouth Harbour.

Ocean, 80—Vice-Admiral Sir Richard King, Bart. K.C.B., Capt. S. Chambers, Sheerness.

Onyx, 10—Lieut. A. B. Howe, Plymouth station.

Orestes, 18—Com. W. N. Glascock, 12th Aug. in the Douro.

Pallas, 42—Capt. W. Walpole, 12th June left Barbadoes for Jamaica.

Pearl, 20—Com. R. Gordon, 26th May arr. at Barbadoes from Halifax.

Pelican, 18—Com. J. Gape, 18th June at Smyrna; 16th July arr. at Malta.

Pelorus, 18—Com. R. Meredith, 16th May sailed for the Mauritius from the Cape.

Phœnix, St. V.—Com. R. Oliver, Woolwich.

Philomel, 10—Com. W. Smith, 18th June at Gibraltar.

Pickle, 5—Lieut. C. Bagot, Bahamas.

Pike, 12—Lieut. A. Brooking, 19th July left Falmouth for Lisbon; 23th sailed, and arr. at Falmouth 10th Aug

Pincher, 5—Lieut. J. Hookey, 19th May arr. at Jamaica.

Pluto, St. V.—Lieut. T. R. Sullivan, 19th June at Ascension, refitting.

Prince Regent *Yacht*—Capt. G. Tobin, Deptford.

Pylades, 18—Com. E. Blankley, 19th May in the River Plata.

Pyramus—26th July Plymouth Sound; 17th Aug. sailed in charge of Forte.

Racer, 16—Com. J. Hope. Portsmouth. Reported for North American station. Fitting.

Rackhorse, 18—Com. F. V. Cotton, 8th May left Jamaica for Nassau.

Rainbow, 28—Capt. Sir J. Franklin, Knt. 28th June sailed for Levant; 24th arrived in Basika Bay; 3d July sailed for Samos.

Raleigh, 18—Com. A. M. Hawkins, 12th June sailed; 10th July arr. at Malta from Tripoli; 17th July sailed for Alexandria.

Rapid, 10—Lieut. Com. F. Patten, Portsmouth, fitting.

Rattlesnake, 28—Capt. C. Graham, 23d Dec. sailed for Lima and California.

Raven, S. V. 4—Lieut. W. Arlett, 19th Aug. arr. at Spithead.

Revenge, 78—Capt. D. H. Mackay, 9th Aug. sailed for Cork, with detachments of 89th regt.; arrived 10th.

Rhadamanthus, St. V.—Com. G. Evans, 17th May arrived at Barbadoes; 20th left for Jamaica; arrived 26th May.

Romney, *Troop Ship*—Mr. R. Brown, 3th Aug. sailed with part of 89th regt., Col. Sir E. Miles, for Cork; 10th arrived.

Rover, 18—Com. Sir G. Young, Bart., 12th June sailed for the Levant.

Royal George *Yacht*—Capt. Right Hon. Lord A. Fitzclarence, G.C.H., Portsmouth.

Royal Sovereign *Yacht*—Capt. C. Bullen, C.B., Pembroke.

Royalist, 10—Lieutenant R. N. Williams, Plymouth station.

St. Vincent, 120—Capt. H. F. Senhouse, 12th June sailed for Levant: 24th June arrived in Basika Bay; 3d July sailed for Samos.

Salamander, St. V.—Com. W. F. Austin, 20th July arr. at Plymouth, with Rodney from Milford: 24th sailed for Milford; 10th Aug. at Hamoaze, with the Belleisle, 74, Woolwich.

Samarang 28—Capt. C. H. Paget, 1st June arrived at Bahia from Rio.

San Josef, 110—Admiral Sir W. Hargood, Capt. G. T. Falcon, Hamoaze.

Sapphire, 28—Capt. Hon. W. Trefusis, 18th June left Bermuda for Halifax, with Capt. Sir T. Usher; 30th June arrived there, and 3d July sailed for Newfoundland; 9th July arrived there.

Satellite, 18—Com. R. Smart, 6th June arr. at Spithead; 17th June sailed for South America. Passenger, Lieut. Rothery, R.N.

Savage, 10—Lieut. R. Loney, 31st July, and 12th August, off Oporto.

Scout, 18—Com. W. Hargood, 27th June arr. at Gibraltar; 8th July arr. at Malta; 29th at Archipelago.

Scylla, 18—Com. Hon. G. Grey, 7th July arr. at Malta from Tripoli.

Seaflower, 4—Lieut., J. Morgan, Portsmouth station.

Serpent, 16—Com. J. C. Symonds, 18th July arr. at Spithead from Sheerness. 20th July sailed for West Indies.

Skipjack, 5—Lieut. W. Shortland, 26 May at Jamaica.

Snake, 16—Com. W. Robertson, 4th June arr. at Portsmouth; 15th sailed for South America. Passengers to join H.M S. Spartlate, Capt. J. Whylock, R.M., Lieutenant W. J. Collins, R.N.

Sparrow, *Cutter*—Lieut. C. W. Riley, 21st July arr. at Falmouth from Oporto; 27th sailed for Lisbon; 21st Aug. arr. at Spithead; left Lisbon 5th, and Oporto 12th.

Spartiate, 74—Rear-Admiral Sir M. Seymour, Capt. R. Tait, 23d May and 6th June at Rio Janeiro.

Speedwell, 5—Lieut. Crooke, 17th May arrived at Maranham.

Speedy, *Cutter*—Lieut. J. P. Roepel, 27th July in Hamoaze.

Stag, 46—Capt. N. Lockyer, 5th Aug. in the Tagus.

Swan, 10—Lieut. J. E. Lane, 10th June sailed from Sheerness for Leith, for Scotch fishery.

Sylvia, 1—Lieut. T. Henderson, Portsmouth station.

Talavera, 74—Capt. E. Chetham, 5th Aug. Tagus.

Talbot, 28—Capt. R. Dickinson, C.B. 24th March at Mauritius; expected home.

Thunder, S. V.—Commander R. Owen, 18th July left Madeira for Demerara.

Trinculo, 18—Lieut. Com. Thompson, 1st June, arr. at the Gambia from Ascension; 14th sailed for Sierra Leone. Bight of Benin.

Tweed, 20—Com. A. Bertram, 4th May arrived at Port-au-Prince.

Tyne, 28—Capt. C. Hope, 31st March arr. at Callao from Islay; 4th April sailed for Arica.

Undaunted, 46—Rear-Adm. Warren, Capt. E. Harvey, 28th May Cape of Good Hope.

Vernon, 50—Vice-Admiral Sir G. Cockburn, K.C.B., Capt. Sir G. A. Westphal, Knt., 18th June at Bermuda.

Vestal, 26—Capt. W. Jones, Spithead.

Victor, 18—Com. R. Russell, 15th May arr. at Barbadoes from St. Lucia.

Victory, 104—Adm. Sir T. Williams, G.C.B., Captain C. R. Williams, Portsmouth.

Viper, 6—Lieut. H. James, 5th Aug. in the Tagus.

Volage, 28—Capt. G. B. Martin, C. B. 29th July at Malta; arrived 11th from Portsmouth.

Wasp, 18—Com. Jas. Burney, Portsmouth, fitting.

Wolf, 18—Com. W. Hamley, 1st Feb. arrived at Singapore.

Paid off into Ordinary.

North Star, 28—21st July arr. at Spithead; 25th went into Portsmouth Harbour; 6th August paid off.

VARIETIES.

The sheers on the new basin at Woolwich, being nearly completed, the Monmouth, sheer hulk, is being dismantled, after which she will be sent to Deptford to try the experiment of heaving her up on Captain Brown's rail-way slip. The Solebay frigate was hove up on the same rail-way a few days ago with perfect ease. The above sheers are constructed of several short spars joined together on a principle invented by Mr. Lang. We understand that a spar so joined is stronger at the point of junction than another spar of the same dimensions. Experiments have been made at Woolwich with two spars, 4½ inches in diameter, one of which was made of two joined by Mr. Lang's method. They were fairly tried between skids, by weights suspended from them. The spar, which had been joined, bore 35 cwt. 2 qrs., and the other broke with 23 cwt. 1 qr. 14 lb. They were both of the same wood.

French Fisheries in 1833.—The following vessels have been despatched from France, on the Cod fishery, either to the Isles of St. Pierre and Miquilon; or on the Banks, and on the coasts of Newfoundland, this season:—

From St. Maloes—90 vessels, estimated at 13,000 tons, and carrying 3,400 men.

From Granville—55 do. of about 8,000 tons, and 2,200 men.

From St. Brieux—45 do. about 7,700 tons, and 2,300 men.

Thus forming from these three ports 190 sail of vessels, of about 28,700 tons; with their crews amounting to 7,900 seamen.—*From the Journal du Havre of the July*, 1833.

Lieuts. Grandy and Rawstorne, R.N. and Mr. Thomas Morgan, Mate of His Majesty's cutter Stork, have been presented with the silver medal, (from the Royal National Institution, for the preservation of lives from shipwreck,) for their brave and humane conduct in saving the lives of the crew of the John, of Jersey, wrecked in Seaford Bay, on the 11th of April last.

Quorra Expedition. — Extract of a letter, dated Fernando Po, May 2d, 1833:—

"A large boat made her appearance yesterday in the offing, and proved to be the Columbine's launch, three days from the river Nun, having on board Mr. Lander, who, I am sorry to say, is exceedingly ill with the dysentery. It was chiefly owing to his illness that he quitted the steam-boats, about three weeks ago. Both steam-boats had reached within a few miles of the river Shadda, but were aground, and likely to remain so for a couple of months. A most terrible mortality had taken place. About twenty Europeans had died; amongst others, all the engineers and the medical gentleman. None of the Kroomen (more than twenty in number) had suffered; a most fortunate circumstance, for there are only three or four Englishmen left in each boat. Lieut. Allan, R.N., was proceeding with his astronomical observations, and Mr. Laird also was there in the long-boat, partly for his health, and partly for the purpose of trading. They had not procured more than five tons of ivory.

"Mr. Lander was four days on board the Columbine at the mouth of the river, before he ventured across here in the long-boat. He luckily has had very fine weather coming across, and is therefore no worse for the trip. On his arrival at the Nun, he will again proceed up the river to rejoin the expedition. The expedition will, in all probability, return to the mouth of the river in three or four months from this. Mr. Lander was, I understand, ten days on his passags down in a canoe, and expects to be three weeks in going up.

"There are two small American vessels in the river Nun, from Providence, Rhode Island. They belong to a company called 'The African Trading Company.' They intended proceeding up the river, but have come out quite unprovided for such an expedition—without a doctor and without a cooper!!! The supercargo was unfortunately shot by his gun bursting, and the crew are dying fast."

Extract of another letter from the same friend, dated Fernando Po, Sunday, May 5:—"I have written you two letters, (only one of which, however, the above, has arrived. Ed.) but both give you wrong intelligence about the Niger expedition. I have just seen Mr. Lander myself, who tells me that the Quorra steam-boat having got aground, about three months ago, five or six miles to the southward of the river Shadda, the expedition had not reached further, as it was not thought prudent for the small steamers to part company. The Quorra got upon a sand-bank, otherwise she might have proceeded, there being three fathoms close to her; as it is, she will be there these two months longer. The Shadda had fallen 33 feet. The larger one, the Quorra, will then go up the Quorra, the small one up the Shadda. There are alive on board the Quorra, Mr. Laird, seven whites, and twenty blacks; on board the Alburka, Lieut. Allan, seven whites, and fifteen blacks. The place that they set fire to on going up (as I mentioned in my former letter) was three days from the sea; and at this place only have they met with any opposition. At this place and adjoining towns (in extent five or six miles) they have leagued together on both sides the river (ten tribes) to stop Mr. Lander on his return; but King Boy and King Jacket are waiting at the mouth of the Nun, to carry him up in their large canoes (which carry guns) past these hostile tribes as far as Eboe. Mr. Lander came down (not for his health) to get supplies of medicine, tea, coffee, &c. Mr. Laird had proceeded up the river Shadda in the long-boat, to trade; Lieut. Allan was left in charge of the steam-boats. Mr. Lander is recovering fast.—*Portsm. Her.*

Launch of the Ringdove.—The launch of the Ringdove, 16-gun brig, at Plymouth, attracted an unusual number of visitors to the dock-yard. The custom of admitting strangers on such occasions has hitherto been confined to the launching of line-of-battle ships, or frigates; but Captain Ross, who is never more happy than when he adds to the enjoyment of those around him, kindly allowed persons unconnected with the establishment to participate in the pleasures of a sight so congenial to English taste. A short time before the hour of launching, the Commissioner and principal Officers of the yard assembled at the head of the ship, when the ceremony of "christening" was performed by Miss Ross. At half past five Mr. Roberts, the Master Shipwright, gave directions for kocking away the dog-shores, when the Ringdove descended the slip with a graceful accelerated motion, and was safely received into the bosom of Hamoaze amid loud cheers, from assembled spectators, and the animating music of a band which had enlivened the scene for some time previous. The Ringdove is a vessel of 428 tons. She is built on Captain Symonds' principle, which, being generally known, caused her to be viewed with more than ordinary interest. It was curious to observe the connoisseurs in naval architecture assembled in various detached groups, appearing to lay down the law of ship-building with as much precision, but with more confidence, perhaps, than if it had been the Surveyor himself. It is due to the Officers of the yard to say, that every arrangement connected with the launch was admirably conducted.—*Devon Tel.*

CAPTAIN NAPIER.

It is not often that we consider the sentiments expressed at dinner meetings of that importance which entitles them to a place in our pages. The late meeting, however, of the friends of Captain Napier at Portsmouth, affords matter which we hold to be well worthy of one, inasmuch as it not only combines the record of a great event in history, with that of an instance of bravery and heroism, which even in the present day may afford a lesson to those who might imagine that the spirit of our navy is gone by with the old school; but it shews how such gallant hearts are and ever will be appreciated by their countrymen at home. The dinner took place on the 6th of August, at Portsmouth, E. Casher, Esq., in the chair.

The Chairman.—Gentlemen, I rise to propose a toast, which I trust you will all drink with enthusiasm. You are aware that the occasion of our meeting is to celebrate the glorious victory of the gallant Napier. Gentlemen, I believe the splendour of that victory was never surpassed, if equalled, in the annals of naval history. You have, no doubt, all heard what our gracious King said, when he was first told of it, that the difficulty of boarding a large ship from a small one could hardly be estimated but by those who had tried it. You have heard, too, what Sir Edward Codrington said at the late meeting in London. He put it to the meeting to conceive the almost impossibility of a vessel bearing down and boarding another twice her size, and that too from the rigging. Yet this had been done by Captain Napier. He did not know which most to admire, the boldness of the undertaking, or the firmness with which it had been carried into execution. You all know, too, that the Duke of Sussex, brother to our gracious Sovereign, condescended to preside at that meeting. In the House of Lords also, when some liberal Lords, Londonderry and Eldon and some others, wished to know whether Capt. Napier was struck off the Navy list, Earl Grey replied, it was with regret that it had been done, and the noble Earl bore honourable testimony to the daring and courage of that gallant officer. The Duke of Buckingham, too, although he was opposed to the cause of Donna Maria, said it was gratifying that so gallant an exploit had been performed by British seamen. And even the Duke of Wellington could not help saying, a more competent officer than Captain Napier was not in the British Navy. The country generally must be rejoiced at his signal success, but how much more gratified must we feel here, among whom he has identified himself in a way never to be forgotten. It is not long since he sat at my right hand in this room; and next to him, an officer called Capt. Reeves; as well as his (the gallant Napier's) son, a lad, who was the first to board the Naô Rainha. He received however five wounds in this hazardous enterprize, and if it is not too long, I will read to you a short account of this affair. (The Chairman here read a document, of which the following is a copy):—

"Captain Charles (son and aide-de-camp to the Admiral) was the first to board the Naô Rainha. Three of them had to encounter about thirty, and at the same time a heavy fire from the cabin and poop. A swell had separated the ships for the space of three minutes. In that short time, Captain Charles had killed four, when his sword got fixed between a ramrod and the musket. In consequence, he was left unarmed. A stab was made at him with a bayonet, which he put aside, and seized the man by the throat. He was stabbed in the back. In the act of knocking down another with his fist, he was knocked down with the butt end of a musket. He has received five wounds; two in the shoulder, one in the back, two in the thigh, a tremendous blow on the head, and a slight wound in the hand. He also saved the life of the Captain of the fleet, by shooting the man who was taking aim at him."

So, gentlemen, you see he's a chip of the old block. No one can know Captain Napier, but to admire him. He is a man of honour in every sense. There are plenty of men in this town who would have been glad to have said any thing against him if they could, but they could not affect his character in any shape. He is a domestic, good man, and in his family circle he is equally estimable as in his public capacity. There are many people here who were disposed to condemn the hull for the rigging. Fine feathers sometimes make a fine bird, it's true, but not always; and here we have an instance to the contrary. I saw by the papers, a few days ago, that Sir somebody Johnson said he was proud to call Captain Napier his cousin. There are plenty of people who are glad enough to call him cousin now! But a little while ago, it was "who's Nap?" and all the rest of it. There are many, who asked that question formerly, who seem to understand who he is now, and some don't hesitate to ask him favours. I know it. Some say he may be a very good and gallant officer, but he is not fit for a member of parliament. Depend on it, he has a good head and a good heart, and is cut out for any thing; and it is only those who say to the contrary, who have soft places in their heads. Gentlemen, Captain Napier is the liberator of Portugal, and, if Donna Maria should succeed in placing herself on the throne of Portugal, she will be entirely indebted to him. There is a gentleman not far off, and I will name him, Mr. Moore, who knows that the ships which have lately reinforced Don Pedro's fleet, never would have been purchased and fitted out if it had not been for Captain Napier; and when he had done this, they would not have got any further supplies, if he had not gone out. But the gallant captain insisted on it that Palmella should go out with him, or he would have nothing to do with it. He told me, that if he found, when he got to Falmouth, Palmella was not there, he would not go out. When he arrived out, you remember he was reported to be sick at Oporto, and well he might be—it was no wonder—for he had a good deal to contend with; and it was nothing but his firmness and determination that could have produced so glorious a result. They promised, when he wanted troops to embark from Oporto for the expedition, that he should have a certain number on board; Napier would not go unless he had the full number agreed on, and it was at last done, or Captain Napier would have returned to England. He knew very well what he could do, and what he could not; and he was determined not to risk a failure for the want of proper means. It was well understood, before he went out, that he would attack the Miguelite fleet the very first opportunity, and board them; and we all know how gallantly he has done this. It is a great cause for exultation to this nation, that so great an exploit has been performed by an Englishman, and all other nations will envy us the honour. Many of them would be delighted to see the English flag degraded, but, gentlemen, we have a pretty good proof that we need not be afraid of this happening, for the courage and daring of British seamen has not degenerated—we have a pretty good proof that, what they have done, we may look forward to their doing again. Gentlemen, I will not detain you longer, than by proposing the health of Captain Napier, for we still know him as such, although he is Admiral De Ponza, Viscount St. Vincent, and all the rest of it. "The health of Captain Charles Napier, and his brave companions in arms, who captured the fleet of Don Miguel." This toast was received with the tremendous cheering, which lasted for several minutes.

Mr. Vice-President William Grant.—I regret very much that it has not fallen into abler hands to return thanks for the honour you have done my friend Captain Napier. I wish that gallant soul were here, to witness the enthusiastic cheers which followed the last toast; but believe me, when I inform him of it, he will duly appreciate it. There could be nothing sweeter to his gallant heart than to have heard those cheers which have done you so much honour. When last we met here, it was to commemorate his defeat; but, gentlemen, we had cause even to rejoice in that, as we saw in the distance the dawn of independence of this borough. But with what different feelings do we now meet, when rallying round the union, under the free banner of constitutional liberty, to celebrate one of the proudest triumphs that ever graced the page of naval history. Portugal is free! The rack and the inquisition, with all their horrors and all their tortures, have been destroyed by this gallant tar! Children yet unborn will in after ages lisp his name with pious gratitude, while every manly heart beats high in veneration of the name of Napier. Gentlemen, it is well worthy of you to bind the laurel on his brow, and to pay this tribute to British valour. Nothing is more calculated than examples of this sort, to inspire the breasts of our rising youth with patriotic virtue. Never shall I forget the cheer that welcomed home the British ships from Trafalgar! Never shall I forget the feelings which then filled my young mind! Gentlemen, Nelson has not died in vain. It was in that school Napier was brought up. Nelson it was who instructed him; and nobly has he followed his precepts. The time has been, when we have owed our salvation to the navy; and the time may again arrive, when every thing may depend on the efficiency of our ships, and on the courage and determination of British sailors; and such being the case, how truly delightful is it to find that the old blue jacket is not worn out! But in the midst of our rejoicing, we have to lament that the name of the brave, the gallant, the intrepid Napier no longer graces the navy list of Great Britain. I envy not that peer's heart who could ask the question in the House of Lords,—Whether Napier still held a commission in the service? I say, I envy not his heart. To say that Napier has been disgraced, is absurd; it is ridiculous. His name has long stood high up in the column of fame, and it only required this last act to place it on the pinnacle. You well know his services—you well know that the blood of his gallant relatives has trickled from Corunna to the Pyrennees. You well know that, wherever the honour of England was at stake, there Napier was to be found. Gentlemen, we cannot afford to lose such men. *We* must do *our* duty, as *he* has done *his*. Let us approach our gracious Monarch's throne. Let us rally round our Sailor King. Let us implore and beseech him to restore to the service of our country so gallant a defender—so good a sailor. I will not detain you longer, but propose to you, as a toast, "Donna Maria, and Constitutional Liberty all over Europe."

We have only room for Mr. Hoskins' speech, which was as follows—

"Gentlemen, I feel great pleasure in joining you on the present occasion, and in offering my humble tribute to the consummate skill and bravery of the gallant Captain, whose distinguished and unparalleled success we are this day met to commemorate; an occasion on which all party feelings are buried in oblivion, and all shades of difference in politics vanish. On this theme all voices must be unanimous. The overflowing tide of admiration sweeps away before it all other considerations but those of esteem and respect for him who has received the willing homage of the admiring world. The brave Napier has, indeed, proved himself a hero, by an exploit such as was never surpassed, and seldom if ever equalled. By bravery most conspicuous, and by courage unparalleled, he has achieved a victory the most complete that ever adorned the annals of history. He has secured to himself the gratitude of all who know how to prize and value the precious boon of constitutional liberty. He has secured to himself an imperishable fame, and will live for ages yet to come in the recollections of the brave in every land. But to the hearts of his own countrymen, how dear must he be! However little we know of the Portuguese language, we shall never forget that the English of Carlos de Ponza is Charles Napier—(tremendous cheers, and "bravo, bravo")—a name which Britain will be proud to rank among the best of her heroes. True it is, that the victory has not been achieved beneath the English ensign, nor in the wooden walls of Old England; but it has been won in the sacred cause of constitutional liberty—to the extinction of a tyranny as odious as ever disgraced the history of barbarous nations — under the flag of Donna Maria. It is also true that, by a law of this country, which would be more honoured by a breach than by the observance, his name has been removed from the list of British naval officers; but his name can never be removed from the hearts of Englishmen, who would, one and all, unite in their efforts to restore him to his rank; an act of justice which will assuredly soon be done, amid the joyful acclamations of every true Briton. Such an event would be grateful to all Englishmen generally, and particularly to the members of that gallant profession of which he is so bright an ornament, and which, so far from indulging in that species of petty and unworthy jealousy which would detract from others' good fortune, would exhibit a sympathetic feeling towards one of whom they may well be proud, and whom they would take to themselves and receive in their arms with pride and gratitude. Gentlemen, it speaks well for our country, that, in both Houses of Parliament, honourable members have spoken in terms of the warmest eulogy of his gallant deeds. It speaks well for the country, that, at the grand meeting which was held the other day to commemorate this glorious victory, several naval officers, well known for their own deeds of valour, bore testimony to the unrivalled skill and courage of the gallant Captain; and it speaks well for the country that the President of that meeting was a distinguished member of the Royal Family, the brother of our most gracious Sovereign. We feel nationally on this great question. We feel locally too. We cannot but feel proud that, mixed up with these gallant exploits, have been the men of Portsmouth and Gosport. Gentlemen, I always feel proud, whenever my fellow-townsmen distinguish themselves, because, to say the least of it, it does no dishonour to our native town. I think I cannot do better than conclude these few remarks, by proposing, "The healths of those brave men of Portsmouth and Gosport, who shared in the glorious victory of the brave Napier."

Services of Captain Napier, C. B. during the late War.—As Lieutenant in the Echo sloop of war, commanded an attack with two boats of the sloop, and carried the Buonaparte, of 12 guns, moored close to the batteries in Laguadille Bay, Porto Rico, the 17th of October, 1799. In the Starling gun-brig, assisted at the capture of seven schuyts off Ambleteuse, 1805. As Commander (made November, 1807,) in the Recruit, an 18-gun brig, engaged and beat off the French corvette Diligente, of 20 guns and 140 men, 6th September, 1808: the Recruit had her main-topmast shot away, but a jury one was rigged, and the enemy was pursued until lost sight of by the brig; Captain Napier was wounded. At the reduction of Martinique, Feb. 1809, in the same brig, engaged the Hautpoult, 74, in a very gallant and persevering manner, and continued to harass her until the Pompee and squadron came up, and eventually captured her, 17th April, 1809. As Post-Captain (made 22d May, 1809) in the Thames, 32, in company with the Cephalus brig, captured a convoy of 14 vessels protected by an armed felucca and 11 gun-boats, at Infrischi, 21st July, 1811. In company with the Imperieuse, 38, made a very gallant attack at Palinaro, 1st and 2d of Nov. 1811. In company with the Pilot brig, 18, attacked the port of Sapre, 14th of May, 1812: a battery and tower surrendered at discretion, 28 vessels were brought out, and the battery destroyed. In company with the Furieuse, 36, captured the island of Ponza, on the coast of Naples (from which he takes the name of Don Carlos de Ponza,) 26th of February, 1813. In the Euryalus, 38, assisted at the capture of a convoy of 22 vessels in Cavalarie Roads, near Toulon, 16th of May, 1813. On the coast of America, 1814, assisted in the attack on Baltimore.

PROMOTIONS AND APPOINTMENTS.

The flag of Vice-Admiral Sir John-Poo Beresford, Bart. K.C.B., was struck on board H.M.S. Ocean, at Sheerness, on the 14th of August, and on the following day that of his successor, Vice-Admiral Sir Richard King, Bart., K.C.B., was hoisted.

PROMOTIONS.

Commander—John Washington.

Lieutenants—R. H. Bunbury; H. Gaitskell; C. T. Hill; J. G. Pearce.

APPOINTMENTS.

Æolus, *Ord.—Boatsw.* W. Huet.

Apollo, *Ord.—Carpr.* J. Perret.

Asia, 84—*Super. Assist. Surgs.* H. Hammond, R. Handyside, J. A. Mould; J. Robertson.

Brisk, 3—*Mids.* T. S. Taylor, F. Harper.

Britannia, 120—*Chapl.* G. R. Lewin.

Caledonia, 120—*Lieuts.* J. M. Clive, J. G. M'Kenzie; *Master*, C. Burney.

Castor, 36—*2d Mast.* J. Ayling.

Cambridge, *Ord.—Boatsw.* S. Bates.

Circe, *Ord.—Carpr.* J. Bennet.

Curlew, 10—*Surg.* J. Stevenson.

Dee, St. V.—*Com.* W. E. Stanley.

Donegal, 74—*Assist. Surg.* A. Miliar; *Boatsw.* T. Mayning.

Endymion, 50—*Lieut.* Hon. A. Murray; *Mid.* E. Smith; *Gunner*, E. Angier.

Farlie, *Conv. Ship*—*Surg.* A. Osborne.

Flamer, St. V.—*Clerk*, W. Cotsell.

Forte, 44—*Mast.* J. Sprent.

Hawke, *Ord.—Gunner*, D. Coakley.

Marlborough, *Ord.—Boatsw.* R. Shaw.

Ocean, 80—*Capt.* E. Barnard; *Lieuts.* J. L. Parkin, H. G. Field, G. St. Vincent King; *Secretary to Admiral*, W. B. Harrison; *Clerks*, T. Vinall, J. Parminter.

Ordinary—*Ports.*, *Surg.* J. E. Riske.

Orestes, 18—*Com.* Sir W. Dickson.

Pandora, *Packet*—*Lieut.* W. P. Croke.

Phœnix, St. V.—*Com.* R. Oliver.

Plymouth, *Hospital*—*Assist. Surg.* J. Salmon.

Racer, 16—*Lieut.* W. W. Chambers; *Mast.* H. Simpson; *Mast. Assist.* W. Baker; *Purser*, A. H. Gilbert; *Vol. 1st Class*, Messrs. Atkinson, Bullen; *Clerk*, W. Scott.

Rapid, 10—*Mast.* G. S. Hall; *Ass. Surg.* C. D. A. Newman; *Mids.* W. N. Haste. B. F. Helpman.

Revenge, 78—*Master*, J. Thomas

Romney—*Assist. Surg.* Yeoman.

Royal Sovereign, *Yacht — Purser*, E. Harris.

San Josef, 110—*Assist. Surgs.* A. Browning, R. Chambers.

Scarborough, *Ordin.* — *Carpr.* A. Kennedy.

Spey, *Packet—Assist. Surg.* J. R. Rees.

Sultan, *Ord.—Boatsw.* R. Simpson.

Thunder, *Surv. V.—Clerk*, J. Milner.

Trincomalee, *Ordin.—Carpr.* W. Ellis.

Trinculo, 18—*Surg.* G. Laurie.

Undaunted, 46—*1st Lieut. Mar.* T. P. Dwyer.

Unicorn, *Ord.—Gunner*, J. Brocklebank.

Vestal, 26—*Col. Mid.* A. Wilson.

Victory, 104—*Lieut.* W. Shallard; *Mast. Assist.* E. Moore; *Sup. Assist. Surgs.* J. Belcher, J. Chalmers, W. B. Dolling, J. H. Martin, J. Salmon.

Wasp, 18—*Lieuts.* P. Duthy, P. H. Dyke; *Mast.* W. A. King; *Mast. Assist.* R. Dean; *Surg.* J. W. Johnson, M.D.; *Assist. Surg.* J. Hussey; *Purser*, T. Rowe; *Mid.* J. Hunt; *Clerk*, J. H. Boghurst.

Winchester, Ord.—*Boats.* Mr. Leese.

Royal Marines.—Woolwich Division. *2d Lieut.* E. Walker.

Coast Guard—*Com.* H. Boteler: *Lieut.* — Baker.

Midshipmen passed for Lieutenants, Commissions since our last.

Seamanship.—C. Y. Campbell, of *Asia;* W. Clayton, of *Ranger;* A. Lowe, of *Excellent;* F. S. Murray, of *Druid;* H. S. Wellington, of *Vernon;* J. Willers.

At the College.—C. Y. Campbell, W. Clayton, E. R. Connor, P. W. Hamilton, J. B. Hickley, P. Johnstone, C. Knighton, A. Lowe, F. S. Murray, O. Beirne, G. E. Patey, F. E. Riske, E. C. Tennyson, H. O. Wellington, J. Wilcox, F. Wilson.

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1833.

Continued from page 496.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
443 Cephalus	—	Stockton	—	N. Gare	2 Aug.	
444 Eamont	Carr	Portsmouth	N. Orleans	Barbuda	12 June	Crew saved.
445 Frances and Mary	Field	Quebec	Waterford	B. Newfdlnd.	11 July	By ice, abandoned.
446 Gen. Wolfe	Redpath	Quebec	Plymouth	46° N. 48° W.	6 July	By ice.
447 Hannah	Richardson	Belfast	Quebec	St. Ann's	31 May	
448 Industry	Hunter	Sunderland	Filey	Off Scarboro'	18 July	Crew &c. saved.
449 John Catto	Moore	Dantzig	Aberdeen	Near Elsinore	3 Aug.	Doubtful.
450 Laburnam	Brown	—	—	African Coast	Previous to 15th June.	
451 Peppel	Morgan	Africa	Liverpool	N. Calabar	—	

FURTHER PARTICULARS OF WRECKS.

Hannah, Richardson—This vessel went ashore during a thick fog at St. Ann's, in the River St. Lawrence: the crew, passengers, and some materials saved.

General Wolfe.—Struck on an ice island, and almost immediately became waterlogged. The crew taken off her by the Earl Dalhousie on the following day.

Peppel.—Intelligence dated Liverpool, 26th July.

Albion, brig, No. 339 of our last number.—The following relates to the loss of this vessel:—On the morning of the 5th ult., during a severe gale, in lat. 46, long. 31, Captain Dempsey, of the ship Kingston, discovered, at a short distance to leeward, a brig lying on her beam-ends, with a flag of distress waving. Capt. Dempsey instantly bore down towards her, when she proved to be the Albion, of Cork, crowded with passengers. Having reached within hail of the unfortunate vessel, a heart-rending scene presented itself. We beheld, says Captain Dempsey, the brig reeling, ere she took the last fatal plunge—witnessed the cool intrepidity of the sailors, even at such a moment—and listened, with feelings the most harrowing, to the piercing shrieks of the ill-fated passengers. The crew of the Kingston flung their best boat into the boiling Atlantic; but exertion was vain, the angry ocean soon made her its prey. The Albion went down, with every human soul on board.

Cephalus.—This vessel, going out of the Tees, ran on the North Gare Sand, and soon became a total wreck. The crew were happily saved by the *Seaton* life boat. Here is another instance to be added to the many which we have already cited, proving the want of such a harbour as we hope soon to see in Port William.*

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* For an account and plan of this harbour, proposed to be made at Redcar, see No. 15, Nautical Magazine.

Martha.[*]—John Sewell, master of the brig Martha, states, that that vessel struck against the ice on the 10th of May, about 290 miles from Newfoundland; her bow was stove in, and she went down in half an hour afterwards. The crew took to the boats. They were eight days before they got clear of the ice, drawing up the boats upon it at night, to prevent their being stove in. After clearing the ice, they shaped a course for Newfoundland, and were seven days more exposed to the perils of the ocean before they reached St. John's harbour.

They were in a most pitiable state when they landed, being nearly starved to death. The merchants of St. John's received them with the greatest kindness, and they recovered rapidly.

Capt. Sewell adds the melancholy news, that he had heard of eight other vessels being lost on the ice, and there were many others not accounted for. Three or four shipwrecked crews were at St. John's; among them, that of the Hero, Captain Wilson.—*Observer*.

Hibernia.—This unfortunate vessel is No. 324 of our table of "Wrecks of British Shipping," and in the following page to that in which it stands, viz. p. 366 of our 16th number, is all that was known of the dreadful event. Since then, however, all the particulars concerning her loss, and the shocking sacrifice which attended it, have transpired, and we extract the following letter from the Hants Telegraph, in which it is related. We have also added to it the consul's letter, stating the arrival of the few survivors at Rio; and have inserted with it the names of all the unhappy sufferers. It is impossible to peruse them without feelings which cannot be described; more particularly when we find that such a loss of life is not to be attributed to the violence of the winds or the sea, but to NEGLIGENCE! Such events, unhappily, have become common of late, though not to the extent of the present, in point of lives sacrificed. We do sincerely hope, and we are quite sure, that there is good sense enough among our merchant captains to prevent, by vigilance and care on their part, the occurrence of such shameful negligence in future. We have noticed a sensible letter in the Times, recommending the use of a forcing-pump for the spirits. Surely our ship-masters dont need an act of parliament, in order to oblige them to take care of themselves and their ships!

"On the 5th of February, 1833, about eleven o'clock A.M. an alarm of fire was given, which was soon ascertained to be but too true. The second mate, who acted as steward, had gone into the state room, and, while in the act of drawing a bucket of rum, let a lighted candle fall into the spirits; and, instead of giving the alarm, endeavoured to extinguish the flames by throwing about the store-room the blazing spirits, which dreadfully burnt his legs and arms, and set fire to a quantity of tar, pitch, spirits, straw, &c. As soon as the alarm was given, the decks were scuttled, and water poured in—every exertion was used to arrest the progress of the all-devouring element, but to no purpose; in less than two hours all hopes of saving either ship or property were abandoned, as the between decks and lower holds were full of smoke, and the flames were breaking through between the decks. The captain now ordered the boats to be launched, which was done. Giving me some books, charts, &c. he ordered me to get into the long boat, and take care of the few provisions which were saved from the sailors' forecastle and cabin. Oh, what a scene of horror now took place! Some were seen dressed up in their best clothes as if going to a ball, others were profaning God's name with the most awful execrations, while some were on their knees, supplicating his mercy.

"'Now shrieked the timid
And stood still the brave.'

"There were 232 souls on board, and the boats would not hold more than a third of the number: they were filled in a moment, and dropped astern. As the ship was still going down, we drifted away, picking up a few who swam from the ship, or floated on pieces of timber. The whole of the sails and masts of the noble Hibernia were now in flames, and in a few minutes fell into the sea. And now a most dreadful scene presented itself—all endeavouring to get upon the masts, with the expectation of being picked up by the boats, there being only the sad alternative—the flames or a watery grave. Those who got upon the rafts had neither water nor provisions, and, if not picked up, would linger out a painful existence, and at last be starved to death, there being little chance of any ship coming that way. We were now in five degrees south lat. and 20 west long. in the south-east trade-winds, having a fair wind for Pernambuco, on the Brazilian coast. We all met, that is, the boats, and determined to make, if possible, Pernambuco, though at a distance of 1200 miles, and having very little provisions and no water. It was a most heart-rending sight to see so many in distress, and unable to relieve them, the boats being quite filled, and the long boat in a leaky state, requiring eight men to bale the water to keep her afloat. We rigged out a jury-mast, and, with the aid of a top-gallant studding-sail, were enabled to make good way. The Hibernia was not more than one mile from us to the windward—many poor creatures clinging to the bowsprit to keep them from the flames as long as possible, waving their hats for us to go and relieve them. The doctor and four sisters were clinging to a rope at the stern of the ship. We would fain have taken them in, but the captain told us it would be at the expense of our own lives; so we abandoned all hopes of saving them. By the help of an old bed-tick we lengthened our sail, and in a little time lost sight of the Hibernia, all our property, and hopes. Next morning the chief mate, in the pinnace boat, left us, and we saw him no more, he having on board seventeen souls. We had given him charts, compass, and sextant, to navigate with. We had nothing to eat from breakfast until the next day at twelve o'clock, and then only two table-spoonfuls of brandy, and two ounces of preserved beef, night and morning, for seven days. On the night of the 6th, a man died from fatigue and hunger. On the captain taking his observations at ten o'clock, he informed us that we were four hundred and ninety miles from Pernambuco, with a light breeze. We had no water the whole time, and gave up all hopes of ever again setting foot on land. On this day we killed one of three small pigs which we had on board, eating it raw, and supping the blood with as much eagerness as if it had been wine. Hunger is fine sauce, but our hunger was nothing to our thirst. Many drank sea-water, though warned against it—several of them became quite delirious. There were fifty-two souls on board, besides eleven in the captain's gig, which he had in tow.

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[*] No. 421 of our last Number.

"At twenty minutes past three o'clock the man at the helm, to the joy of all, cried out, 'a sail a-head." We stood down upon her, after hoisting a sailor's red shirt as a signal of distress; but all hopes were again lost, as the ship had not seen us, when we completely despaired; but, to the great joy of all, we perceived her mizen-topsail backed, and the mainsail hauled up. We then shouted for joy, and in twenty minutes we spoke her. She was the Lotus, of Whitby, from Portsmouth, with convicts and soldiers for Van Diemen's Land. They took us on board, gave us grog, water, and provision; but a —— old Major ordered us into our boat again: we made a stand to a man, and declared we would rather the soldiers run us through than go to sea again in so leaky a vessel. The captain of the Lotus ordered the carpenter to inspect her, and he declared her not sea-worthy; he then sunk her, set the gig adrift, and we on board a good ship. The sailors were kind to us. The Lotus landed us at St. Domingo, to the care of the British consul, who, I am happy to say, is a good man: he ordered us plenty of meat, and a pint of wine after dinner; God knows we had much need of it. The consul has chartered the brig Adelaide, of Dundee, to take us forward to Hobart Town, at Government expense. There is now a subscription on foot, to be paid to us on our arrival at Van Diemen's Land, by the Governor.

"Your's,

"J. Easby."

Extract of a Despatch from Mr. Consul Hesketh, Rio Janeiro, to Viscount Palmerston, Secretary of State for Foreign Affairs.

"On the 21st of February, the arrival of the convict ship Lotus, John Sommerson, master, Superintendent Doctor Brook, R.N., was reported at this office with 62 persons on board, picked up on the 10th instant in lat. 7. 12. S., and long. 28. 19. W., in two boats, having escaped from the British ship Hibernia, William Brend, master, which vessel was destroyed by fire on the 5th of Feb. in lat. 4. 20. S., long. 20. 30. W., on her voyage from Liverpool to the Cape of Good Hope, Hobart-town, and Sydney, with 209 passengers, and a crew of 23 men and officers, making a total of 232 persons on board.

"On the 22d of February the British brig Isabella, Le Flere, master, arrived with 17 more persons saved from the disastrous loss of the Hibernia.

"The enclosed statement describes the persons who suffered, and those landed at this place, 153 unfortunate fellow-creatures having perished.

"The conflagration was accidental, but the cause of such extensive loss of life was the lamentable insufficiency of the boats, not only as to the extent of succour they were calculated to afford, but also their bad and unserviceable state; and the great sacrifice of life which this culpable negligence has occasioned may, in all probability, meet legislative attention and protection.

"I also enclose a list of all those who perished, with a description of each individual, and a similar list of all who were saved.

"These distressed beings were landed from the Lotus and Isabella on the 22d; the passengers are lodged in the most economical way on shore, and the crew distributed amongst the British shipping; all are quite destitute of clothing; I have supplied such as is indispensably requisite.

"I have determined on sending to their destination the passengers saved from the Hibernia, for which purpose a vessel is in the act of being hired, and I expect they will go on board in a few days.

"It is gratifying to couple with such distressing occurrences the announcement of a considerable subscription, at present on foot amongst the British residents, in aid of their distressed countrymen. "Robert Hesketh."

Number of Persons lost.

John Dillon, his wife and two children; P. Sullivan, his wife and three children; James Davis, his wife; B. Ailesby, his wife and child; Samuel Hartley, his wife; W. Smith, his two children; Isaac Farrel, with four children; wife and three children of James Williamson; two children of Mrs. Logan; Thomas Wilson, his wife and two children; W. Richards, his wife; G. Richards; William Richards, jun.;

Charles Richards; Mary Ann Richards; Mary Richards; Martha Richards; Mona Richards; Charles Broomhall, his wife and two children; wife of Peter Roy; John Hooley, his wife; Z. Lutchiffe, his wife; Richard Gregory, his wife and child; Eliza Gregory; James Potten; J. Broomhall; Ellen Broomhall; John Reily; John Roberts, his wife; Samuel Pannel, his wife; Benjamin Garritt, his wife; wife of C. Webster; wife of John Burn; James M'Couchie, his wife; B. M'Convil, his wife; E. M'Donnell; E. Matthews; wife and two children of Richard Perry; W. Smith, his child; Sarah Smith; Thomas Moulton; Richard Fawcett, his wife; Thomas Wadsworth; Robert M'Gee; Jasper Phillips; C. Wallace; M. Liotter; George Alaters, his wife; William Kaye, his wife and two children; R. Kennedy; wife and child of Henry Gillett; Edward Akitt; Mary Moriarty; Elizabeth Moriarty; Mary Gormace; Rebecca Mars; Augusta Fisher; Louisa Poole; Amelia Thorogood; Susannah Petit; wife and five children of Thomas Graham; Ellen Mairas, her two children; Walter Woods, his wife and two children; wife and two children of Henry Palmer; Anna Palmer; Harriet Palmer; Henry Palmer; the four Misses Meider; Mary Ann Hewit; wife of Robert Holmes; 11 girls from the Dublin establishment; Ellen Green;—total, 143.

Cabin Passengers.—Mr. Fleming; Mr. Dickinson, surgeon; Mr. Ridley (who died in the boats;)—total, 3.

Crew.—James Thornton; William Duke; Christopher Shafe; Peter Anderson; W. Carrow; David Jones; —— —— (cook of the ship;)—total 7.

ADMIRALTY ORDER.

The Lords Commissioners of the Admiralty have directed that the extra Clerk allowed to be borne in lieu of a seaman in all rated ships, may be selected from among such as may have passed an examination for Purser, without limitation as to the time of passing, and not as heretofore only from those passed prior to 1829. Mates and Midshipmen are in future to be considered qualified to be entered as Admiralty Mates or Midshipmen, after having passed for seamanship abroad, or both examinations, if at home, one complete year, and not as heretofore, only those passed prior to 1830.

MOVEMENTS OF TRANSPORTS.

Arab—Lieut. W. C. Harris, Agent, arrived at Plymouth on the 15th inst. from the Mauritius, Ceylon, and the Cape. The Arab has brought home passengers, Lieut. Barlow, 61st Regiment, from Ceylon; Lieut. R. Dawson, R.N. from Swan River; Lieut. R. Harris, 87th Regiment; Dr. Atkinson, in Medical charge of invalids from the Mauritius; Lieut. Waugh, 98th Regt. from the Cape; Mr. Wilson, Surgeon, R.N. and lady; Mr. Morris, Assistant-Surgeon, R.N., and Mrs. M. A. Payne, from Ascension.

Marquis of Huntley—Lieutenant John Saunders, Agent, arrived on 16th Aug. from the West Indies, having been employed in conveying detachments and stores to the different islands. She has brought home a quantity of ordnance, naval and victualling stores, and Mrs. Capt. Chads and family, of the 1st West India Regt., and remains at Spithead for orders.

Stentor—Lieut. Davison, Agent, arrived at Portsmouth on 20th Aug. from Rio Janeiro. She left Valparaiso on the 17th of March. The Stentor left Rio on the 6th of June, with unserviceable and obsolete stores, and passengers, Lieutenant Fordyce, and Mr. Weaver, Clerk, both of the Algerine; and Mr. A. B. Paddon, late Midshipman of the Dublin; and two distressed British subjects. She sailed on Friday for Gravesend, having received sundry detachments of troops from the Athol for conveyance to that port.

Births.

At Belmont-place, Weymouth, the lady of Lieut. Carey, R.N., of a daughter.

On the 8th Aug. at Geneva, the lady of Capt. Basil Hall, R.N., of a son.

Lately, at Woolwich, the lady of Lieut. and Adjutant Phillips, R.M., of a son.

Lately, at Purbrook Common, the lady of Captain T. Moore, R.N., of a son.

Lately, in Sommerland Terrace, Plymouth, the lady of Lieut. T. Creser, R.N., of a daughter.

On the 20th Aug., in the Dock-yard, Mrs. Cobbe, of a daughter.

At Chelsea, on the 25th inst., the lady of Mr. James Sparshott, Purser, R.N., of a daughter.

Marriages.

On the 13th of August, at Madron, by the Rev. H. Gregory, Lieut. A. Miles, R.N., to Miss Sibella Elizabeth Hatfield, daughter of Mr. John Westby Hatfield, of Penzance.

Lately, at Stoke, Plymouth, by the Rev. W. J. St. Aubyn, Joseph Stevenson, Esq., Surgeon, R.N., to Margaret Pattison, second daughter of Wm. Mould, Esq., of George-street, Devonport.

Lately, Mr. Joseph Watson, R.N., to Susanna, eldest daughter of Mr. Smart, of this town, Navy Agent.

At Stonehouse Chapel, by the Rev. J. W. Campbell, Mr. William Abbot, R.N., to Miss Brock, of Cornwall.

At Newton Valence, Capt. Lemprier, R.N., to Frances, daughter of W. Dumaresq, Esq., of Pelham-place, Hampshire.

At Newhaven Church, by the Rev. J. Smith, on Wednesday the 24th July, Captain James Morgan, R.N., of the Coast Guard service, to Eliza, daughter of T. C. Faulconer, Esq., of Newhaven.

On the 8th Aug., at Lowestoft, William Innes Pocock, Esq., R.N., to Elizabeth Anne, only daughter of Richard Pearson, M.D., Member of the Royal College of Physicians, and F.A.S. London.

At Portsea, last week, Mr. Michael Heath, R.N., of Dartmouth, to Miss Lavers, of the former place.

On the 20th Aug., by the Rev. J. C. Masters, G. Wright, Esq., of His Majesty's yacht Firebrand, to Susanna, eldest daughter of Lieut. Simpson, R.N., Coast Guard, Greenwich.

At Sidmouth, Capt. Nesham, R. N., to Elizabeth, youngest daughter of the late Col. Nicholas Bayly, brother of the late Earl of Uxbridge.

At the same time, Capt. C. Hamlyn Williams, R.N., to Harriet, daughter of the late Sir Nelson Rycroft, Bart.

At Boulogne, Capt. J. Wigston, R.N., to Mary, daughter of the late Major-General Sir J. Chalmers, Madras army.

Married, in London, Lieut. Thomas James, R.N., son of the late John James, Esq., of Truro, to Emma, second daughter of the late H. P. Andrews, Esq., of Bordean, Cornwall.

At Portsmouth Church, lately, Mr. Jacob Vermeulen, late of H.M.S. North Star, to Miss Sarah Fanner, of this place.

On the 12th Aug., by special licence, at St. George's, Bloomsbury, Captain Bishop, R.N., to Sarah, widow of the late Giuseppi Cipriani, Esq. of St. Thomas's.

Deaths.

Lately, aged 61, in Gloucester-street, Portsea, Mr. G. Robinson, R.N.

At Thetford, Captain Booty Harvey, R.N., C.B. (1812,) aged 69.

At Belfast, Lieut. Thomas-Williams Charleton, R.N. (1811.)

At his father's residence, Bonython House, near Helston, of consumption, Charles Trelawny, youngest surviving son of Colonel Passingham, and late of H.M. ship Kent, deeply and deservedly lamented by his relatives and friends.

In London, on the 22d July, Lieut. Frederick Thompson, R.N. (1815,) aged 49.

At Hatherleigh, on the 25th July, Mr. John Fisher, Surgeon, R.N. leaving a wife and eight children.

In the naval action off Cape St. Vincent, on the 5th ult., Lieutenant Frederick-George Mc. Donough, R.N. His *nomme de guerre* in the Portuguese service was Captain George.

At Stanraer, on the 9th July, Lieut. Wm. M'Dowall, R.N. aged 39. He was highly respected both as an officer and a gentleman.

On the 6th Aug. at Carmarthen, Captain Henry Vaughan, R.N. (1806,) aged 76.

At Else, in Fifeshire, Capt. John Porteous, R.N. (1814.)

At Rio Janeiro, aged 22, Mr. Edward Hellyer, (son of Mr. Hellyer of Cosham, clerk of H.M.S. Beagle. He went out on a shooting excursion with some of his shipmates, and having shot a bird that fell in the water, he was induced to go in after it, when he became entangled by some weeds, and was drowned.

At Harberton Ford, near Totnes, Arthur Stapeldon, Commander, R.N. aged 64.

In the action off Cape St. Vincent, under Admiral Napier, Lieut. E. Knyvett, of the Marines, son of W. Knyvett, Esq.

At Florence, Capt. C. Montagu Walker, Royal Navy.

On the 15th ult. at Calceto Cottage, near Arundel, John Seward, Esq., Purser, R.N. (1796,) in the 55th year of his age.

Lieut. Stephen Link, of the Pioneer revenue cruiser, attached to the Kentish Coast, and late of Torpoint, put an end to his existence lately. His remains were discovered next day by some boys in a copse, between the King's Ferry and Milton, near Sheerness; and it appeared, that on the preceding night the unfortunate officer left his wife in bed, crossed the river opposite his station, and blew out his brains with a pistol. Some misunderstanding between the deceased and his men seems to have operated on his mind, and caused the fatal catastrophe. The coroner's jury returned a verdict of "temporary insanity."

On the 10th Aug. in Frederick-street, Portsea, aged 39, Mr. J. C. Robinson, R.N.

Lately, at Kensington, John Giffard, Esq. of the Admiralty, late of Lyme, eldest son of the late Sir Harding Giffard, Chief Justice of Ceylon.

Lately, Capt. Keats, R.N. was sailing in Batticombe Bay, in an open boat, with Mrs. Keats, and her two sisters, Miss Diana and Miss Louisa Pitman. The boat was upset by a squall. Capt. Keats seized Miss Louisa, and swam towards the shore, till he was met by a preventive service boat; but his wife (to whom he had only been married a few weeks) and her other sister were drowned.

At Piddletrenthide, Dorset, a few days since, John Hawkins, Esq. aged 52, a retired Commander, R.N.

On the 9th Aug. at St. Peter's, Guernsey, Lieut. W. B. Bartlett.

In London, on the 30th July, Lieut. Peter Blake, R.N. (1809.)

At Haslar Hospital, on the 30th July, Lieut. Thomas Daws, R N. (1809.)

At Hemstead Parsonage, on the 28th of April, James Smire, Esq. aged 63, Master, R.N. and late Master-Attendant of H.M. Dock-yard at Bermuda.

At Coburn Place, London, on the 30th July, Lieut. Peter Blake, R.N.

At Demerara, on the 24th June, Captain R. H. Muddie, R.N.

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&c.

OCTOBER, 1833.

HYDROGRAPHY.

Note.—All bearings are Magnetic, unless otherwise stated.

64.—DESCRIPTION OF A BEACON ON LOOE KEY, FLORIDA REEF.

THE statement respecting this beacon in some of the papers not having been correctly given, the secretary to Lloyd's, with his usual zeal for the improvement of navigation, has furnished us with the original communication from the Vice-Consul at Key West, of which the following is a copy:

"*His Britannic Majesty's Vice-Consulate,*
Key West, 24th July, 1833.

"Sir—The Beacon on Looe Key, Florida Reef, that was destroyed by the gale in October last, is now rebuilt. It is thirty feet high, and twelve feet diameter, and has a Black Ball at an elevation of eight feet from its summit. It can be seen about eight miles from the deck of a vessel in clear weather. It is in 24° 28′ north latitude, 81° 37′ west longitude, 28 miles from Whitehead's Point light-house, or Key West, and 37 miles from Sand Key light, and can be approached with safety from the southward within two miles.

"I have the honour to be, &c.
"O. O'HARA.

"To John Bennett, Esq. Secretary at Lloyd's, London."

65.—LORTON ROCK, IN THE PROVIDENCE NORTH-EAST CHANNEL.

The following is the account of a very dangerous sunken rock lying nearly in the middle of the Providence North-East channel, on which the ship Lorton struck on the 2d of July last:

Extract of a letter from Mr. George Duncan, late commander of the brig Lorton, of Liverpool, to the Secretary of Lloyd's:—

"You will oblige me, as well as my seafaring brethren, traders to or about the Bahama Islands, by causing it to be made public that the brig Lorton, of

Liverpool, from St. Domingo to Nassau, on the morning of the 2d of July, struck on a sunken rock bearing from Egg Island N. by W. ½ W. eight miles, and immediately filled with water. The rock is about the size of a boat's bottom, and six feet below the surface of the water, with seven to eight fathoms of water on both sides of it. The longitude of this rock is, by a good chronometer of Messrs. Molineux and Sons, London, 77.° 1'., and latitude, by a meridian altitude of the sun, 25.° 38.' The rock is not in any chart which I have seen, and the fishermen in the vicinity of the place report that they did not know of it. When the vessel struck, she was going at 7½ knots per hour."

The foregoing will suffice to guard navigators from this danger until further accounts are received respecting, it from the officers employed in the survey of the West India islands.

66.—DANGEROUS ROCK IN THE ANCHORAGE OFF ISLE CROCKATOA IN THE STRAIT OF SUNDA.

We are indebted to that able Russian circumnavigator, Captain Lutké, for the following account of a dangerous rock in the anchorage under the Island Crockatoa, in the Strait of Sunda. On referring to Captain Horsburgh's chart of this strait, the position assigned to the rock by Captain Lutké appears to be very nearly where twenty fathoms are marked. Vessels, therefore, frequenting this anchorage should be careful to avoid the danger.

The Russian corvettes Seniavine, Captain Lutké, and the Moller, Captain Stanukovitch, leaving the China Sea, by the Sound, anchored on 9th Feb. 1829, under the Island Crockatoa. On approaching the anchorage, the Moller touched a rock which is not laid down in any charts. On sounding it afterwards in a boat, it was found to be a piece of coral about 120 yards in circumference, situated 1½ mile from the nearest point of Crockatoa, and S. 43° E. from the north-east point of this island, or rather from the islet which lies off the north-east point of the great island. Eighteen feet water was found on this dangerous rock; but there must be less, as the corvette which touched it does not draw more than fourteen feet. The sea, moreover, was calm, and the coral was distinctly visible under her bottom.

67.—LISMORE, BARRAHEAD, AND GIRDLENESS LIGHTHOUSES, *on the Coast of Scotland.*

"The Commissioners of the Northern Lighthouses hereby give notice, that the three new Light-houses above mentioned have been erected, and will be lighted up on the night of Tuesday the 15th day of October, 1833. The lights will continue thereafter to be exhibited every night from the going away of daylight in the evening till the return of daylight in the morning.

"The following specification of the positions of these Light-houses, and of the appearance of the lights, is given by Mr. Stevenson, engineer to the commissioners:—

LISMORE LIGHT-HOUSE.

"Lismore Light-house is erected on the small island called Mousedale, or The Lady's Isle, at the western extremity of Lismore Island, in the county of Argyle, in lat. 56° 30′ north, and in long. 5° 40′ west. This light opens the two channels leading along Lismore to the Caledonian Canal, by Fort-William, and, also, the Sounds of Loing, Islay, and Mull. The light-house bears from Seaskerry Rock, S.S.W. ½ W., distant 1¼ mile; from the southern entrance of the Sound of Mull, S.S.E. ¼ E., distant 3 miles; from the Lady Rock, E.N.E., distant 1081 yards; from the northern entrance of the Sound of Islay, N.E. ½ E., distant 38 miles; and from Dunolly Castle, at the western entrance to Oban, N.W. ¼ N., distant 7 miles. These bearings are taken by compass, and the variation is 27° west.

"This light will be known to mariners as a Fixed Light from oil, with reflectors; and will be seen like a star of the first magnitude at the distance of 12 miles, and at intermediate distances, according to the state of the atmosphere. The lantern is elevated 103 feet above the medium level of the sea.

BARRAHEAD LIGHT-HOUSE.

"Barrahead Light-house is erected on the most southern extremity of the groupe of islands called Barra, Uist, Harris, and Lewis, and known to mariners as the Long Island. It is situate in the county of Inverness, in lat. 56° 48′ north, and in long. 7° 33′ west. It bears from the Island of Muldonich, one of the Barra Isles, W.S.W. ½ W., distant 9 miles; from Hysker, off the Islands of Cana and Rum, W. by N., distant 33 miles; from the Rock Skerryvore, N., distant 37 miles; from Stevenson's Rocks, N. ½ E., distant 38 miles; from Tory Island Light, in the county of Donegal, N.E. ¾ E., distant 93 miles; and from the Island of St. Kilda, S. ¼ W., distant 68 miles. The bearings are by compass, and the variation is 28° west.

"This light will be known to mariners as an Intermittent Light, suddenly appearing like a star of the first magnitude, and continuing 2½ minutes in view, when it is suddenly eclipsed for half a minute. The entire effect is thus produced in three minutes. The light will be from oil, with reflectors. The lantern is elevated 680 feet above the medium level of the sea, and is glazed or open from N. by E. to E.N.E., and intermediate points westerly and southerly. In clear weather, the light will be seen at the distance of 32 miles, and at intermediate distances according to the state of the atmosphere.

GIRDLENESS LIGHT-HOUSE.

"Girdleness Light-house is placed on the headland of that name in the county of Kincardine. It is situate in lat. 57° 8′ north, and in long. 2° 3′ west; and immediately off it lies the sunken rock called the Girdle. This Light-house bears from the North Pier of Aberdeen, S. by W., distant 1220 yards; from Buchanness Light-house, S.W. ½ W., distant 25 miles; and from the Bell-Rock Light-house, N.E. ¼ N., distant 43 miles. The two lanterns at this station are open or glazed from N.N.E. to W.S.W. ½ W., and intermediate points, easterly and southerly. The bearings are taken by compass, and the variation is 26° 45′ west.

"Girdleness will be known to mariners as a Double Light, exhibiting from the same tower two Fixed Lights like stars of the first magnitude, the one over the other; but to a distant observer the lights will appear as one, having an elongated form. These lights will be from oil, with reflectors, placed in lanterns, elevated respectively 115 and 185 feet above the medium level of the sea, and will be seen at the distance of 13 and 16 miles, and at intermediate distances, according to the state of the weather.

"By order of the Commissioners of the Northern Light-houses,
"C. Cuningham, Secretary.

"*Edinburgh, September* 2, 1833."

68.—The New Light-House on the Island Oxoe, *at the Entrance of Christiansand.*[*]

The height of the Oxoe Light is 135 feet above the level of the sea. In clear weather it presents the following appearance:—

For the space of two minutes fifty-five seconds, a steady flame may be seen; then follows a short eclipse, succeeded by a brilliant flash; again, a short eclipse, after which it regains its original steady flame.

The strong flashes occur every four minutes, and are discernible as far as five geographical miles, whilst the steady light loses itself as you recede from the Light-house beyond three and a half to four miles. The light shews as above through all points of the compass, and is kept burning throughout the year.

The Light-house is white, and serves for a Day mark.

At the distance of one mile from Oxoe, with the light on that island in N.W. b. N. ¾ N. you may, from the shrowds, and in clear weather, distinguish the Odderoen Harbour light, bearing N. b. W. ¼ W. Steering this course, with Odderoe light in sight, you go clear of all dangers, until you get within twenty fathoms' distance from the light, when you alter your course to N.W. ¾ N. Keeping this course, after having sailed past the light four to five cable-lengths, you may let go your anchor in a depth of thirty to forty fathoms.

Odderoe Light is kept burning all the year round, the same as Oxoe Light, with the exception of the particular lamps which guide you from Odderoe Island into Vort. These lamps are put out on the 31st of March, and lit again on the 1st of August.

It should be noticed, that the space between the rocks along Oxoe and Gronningen in which Odderoe Light is visible, is three to four cable-lengths across. In the middle of this space is the course to be steered, namely, N. b. W. ¼ W., and where the Odderoe Light shews most brilliant.

On either side of the line its lustre decreases as you approach the rocks to 1½ or 2 cable-lengths.

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[*] See p. 6 of Naut. Mag. No. 11, for former notice of this light.

69.—REMARKS ON FALSE AND SIMON'S BAYS, WITH DIRECTIONS FOR ENTERING THEM, *by Mr. C. P. Bellamy, late Master of H.M.S. Maidstone.*

Ships entering False Bay, and bound into Simon's Bay, at night, should be extremely cautious not to mistake the high land of Musenberg for the Block-house Point, and the high land on the south side of Simon's Bay, as several very serious losses have been sustained in consequence, not by strangers only, but by persons who have frequently been into Simon's Bay. The advantages of a light-house on the Noah's Ark, which might be built at a trifling expense, have frequently been represented to the Colonial Government, and, had a light-house been erected, there can be no doubt that many a valuable ship which has been wrecked on the Beach of Musenberg would have reached the anchorage of Simon's Bay in safety. In order to prevent the above-mentioned mistake, the following remarks are offered, which, if attended to, it is to be hoped they may answer the purpose intended.

The land on the east and west sides of False Bay is high, but Seal Island, and the land on the north side of False Bay, from Musenberg to Gordon's Bay, is low, flat, and sandy, and can only be seen at a short distance.

To ships coming into False Bay from the eastward, there will appear three distinct patches of sand on the N.W. side of False Bay, the southernmost of which is on the N.W. side of Simon's Bay: the second in Elsey Bay, and the third in Fish-hook Bay. These are the only sand-hills on the west side of False Bay, except a very small one in Buffalo Bay, a little within the Cape Point, which can be seen only at a short distance.

Between the Cape Point and Noah's Ark there are four houses, with cultivated spots of ground near them: the first is a long, low, flat-roofed house, (whitewashed,) situated over Buffalo Bay; the second is a small flat-roofed house at Giltkest, near the sea, about two and a half miles to the southward of the Noah's Ark; the third is a regular-built house, with a shingle roof, and with out-houses attached to it, situated in a valley some distance from the sea, and about two miles from the Noah's Ark; the fourth is a thatched cottage belonging to Government, with a number of oak-trees in front of it, a short distance from the sea, situated about a mile to the southward of the Noah's Ark. The Noah's Ark is a remarkable rock, with a flat top and perpendicular sides, about ten or fifteen feet above the sea at high-water. The Block-house on southern point of Simon's Bay has a battery and a white round tower on it.

Directions for Sailing into False and Simon's Bays by Day.

Ships coming from the westward by day, outside the Anvil and Bellows, frequently lose much time and ground by being apprehensive of the Anvil, when it does not break to shew its situation, and consequently run much further eastward than is necessary. It is therefore recommended, after passing the Bellows at about a half a mile distance, to steer east, until Elsey Peak, the western point of Fish-hook Bay comes well open of all the land between the Cape Point and Simon's Bay bearing N. or N. ½ E., or until the house before mentioned in Buffalo Bay comes well open of the Cape Point, bearing N. N.W. ½ W. They may then be assured of being to the eastward, and clear of the Anvil, and may haul in N. b. E. When the northern point of Smith's Winkle Bay bears W. b. N. they are to the northward of the Whittle, and may haul in N. or N. b. W. until they have made out the Noah's Ark:

pass between it and the Roman Rocks, taking care to keep Hanglip open to the eastward of the Ark, bearing S.S.E. (to avoid a ledge of sunken rocks* lying off east from the Block House, and about one-third of a mile to the N.W. ½ N. of the Noah's Ark,) until the Block House bears S.W. b. W. then haul in W.N.W. for the anchorage, and anchor in ten fathoms water; Block House bearing S. b. E. ½ E., Dock-yard Clock W. b. S. ½ S., Hanglip on with, or just open of the highest rocks off Block House Point. Small vessels, or a ship that is going to remain any time in Simon's Bay, may anchor nearer the Dock-yard, taking care to give a berth to the Wharf Rock, which lies 130 fathoms E.N.E. of the town Jetty, having on it nine feet at low-water. On the outer edge of this rock is a white buoy in 4½ fathoms. Noah's Ark may be passed within 30 or 40 yards, having nine fathoms close to its N.E. side; and the Roman Rocks may be approached to within 100 yards on its S.W. side.

Working in by Day.

Passing outside the Bellows and Anvil, the best plan is to work up between the Whittle and the western shore, if the wind is to the westward of north: if eastward of north, stand well to the eastward, so as to lay well up the bay, and to windward of the Whittle, on the starboard tack. Be careful when standing towards it to keep the marks well open, to avoid the danger, and when well up the bay, do not stand to the eastward, to bring the centre of Seal Island more to the northward than N.E. b. N. on account of the York Shoal; a dangerous one, having only twelve feet water on it, lying a mile and three-quarters S. b. E. from the island. As you approach the Roman, be careful to give it a berth on the N.E. side of at least a quarter of a mile, on account of the two rocks which are on the extremity of the ledge, to the N.E. of it, on one of which there is sixteen feet, on the other twenty feet. The twenty feet rock lies N. 34° E. 135 fathoms, with the cupola of the dock-yard clock on the north side of the door of the old Admiralty House, and the Roman rock on with the north end of the commandant's house. The sixteen-feet rock bears from the Roman N. 24° E. 155 fathoms, with the cupola of the dock-yard clock on with the door of the old Admiralty house; the breaker of the sunken rock of the Roman on with the Green Hummock at Giltkest. These rocks are 55 fathoms from each other.

Ships coming from the westward may with safety pass between the Bellows and the land, and between the Anvil and the Cape Point, by giving the Bellows a berth of half a mile. When between it and the land, steer E. b. N. or E.N.E., keeping the point of the cape open on the larboard bow, until the house in Buffalo Bay comes open, or the Cape Point bears N.W. b. N., then haul in N.N.E., which will lead midway between the western shore and the Whittle; and when the northern point of Smith's Winkle Bay bears W. b. N. you are past it, and may follow the before-mentioned directions. But it is to be observed, that this passage ought not to be attempted without a leading wind and commanding breezes, as there is frequently a strong current setting round the Cape Point.

Sailing in by Night from the Westward with a leading Wind.

Having made the Bellows, keep it open on the larboard bow, and pass it at half a mile distance, then steer east 3½ miles, or, until the Cape Point, if distinctly seen, bears N.W. b. N. when you may steer N. b. E. Having run eight miles on this course, and having got into 22 fathoms water, you are to the northward of the Whittle. Steer on N. b. E. five miles more; you will then be abreast of the Roman Rocks. Should you not make out the Noah's Ark distinctly, it would be advisable to go to the eastward of the Roman, to do which, having run the before-mentioned distance, steer north until you shallow the water to 15 fathoms, or, if it be a clear night, and you can with certainty distinguish the Peak above the Block House, and to the southward of Simon's Town, bring it to bear S.W. b. W. ½ W. and haul in west for the anchorage. When the eastern extremity of the land bears S.S.E. and you are in 10 or 11 fathoms, anchor. If Noah's Ark can be distinctly seen, the directions for sailing in by day may be followed; but it is necessary, if sailing in by night, to keep a good look-out for the Roman Rocks, as the sea is nearly level with their top at high-water.

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* On the extremity of this ledge a Buoy has lately been placed.

Working in by Night.

After passing the Bellows and Anvil, as before directed, haul close to the wind on the larboard tack, and if not lying higher than N.E. you will not go near the Whittle. Stand on upon the larboard tack about 12 miles, or, until Smith's Winkle Berg (if it can be distinguished) bears W. b. N. Then tack and stand towards it, taking care not to bring it to the northward of W. b. N. on account of the Whittle, nor Elsey Peak to the westward of N.W. on account of the York Shoal; or, if it is preferred to work up in-shore of the Whittle, stand on seven or eight miles on the first tack, or until you can weather Cape Point, and stand into Buffalo Bay until the Point bears south, then stand off until it bears south-west. When drawing near the north part of Buffalo Bay, do not stand towards the land nearer than to bring the point of the cape S.S.W., and, when standing off, do not bring the cape to the westward of S.W. until you are certain of being within the Whittle. Being well within the Whittle, you may stand off, to bring Elsey Peak N.W. if seen, otherwise you must judge by the distance run; taking care to avoid the York Shoal 1¼ miles S. b. E. of Seal Island. Be careful to avoid the Roman, also, when approaching it, the situation of which may be known in a clear night by the bearings of Elsey Peak and the peak above and to the southward of Simon's town, the former bearing N. from it, and the latter W. b. S. ½ S. Stand into the bay according to the directions given for "Running into the bay at night with a leading wind."

N.B. Should it become very dark or thick weather, it would be advisable to anchor, if within the Whittle.

N.B. The Roman, from Noah's Ark, bears N.E. ¼ E. Coming from the eastward, and not being less than two miles from the point of Hanglip, steer direct for the highest part of the land of Smith's Winkle Berg, the north part of Smith's Winkle Bay, or N.W. b. N., until the cape point bears S.W., then follow the before-mentioned directions.

70.—NAVIGATION INTO HARWICH HARBOUR. BUOY ON THE WEST ALTAR.

" *Trinity-House, London*, 19*th September*, 1833.

" Notice is hereby given, that this corporation has caused a Buoy, painted Black, and marked on the head " West Altar," to be laid on the western elbow of the shoal named the Altar in the entrance to Harwich harbour.

The buoy lies in 12 feet at low water spring-tides, with the following marks and compass bearings, viz.:

Harwich High Light-house, its apparent width open Northward of the Low Light-house, bearing .... N.W. b. N.

The First Martello Tower, Eastward of Languard Fort, on with the extreme Southern Outworks of that garrison, bearing . . . E. b. S. ½ S.

"By Order, "J. Herbert, Secretary."

Tide-Table for October, 1833.

Mean Time.

Week D.	Month D.	Plymouth *Dock Yard.*				Portsmh. *Dock Yard.*				Sheerness *Dock Yard.*				London *Bridge.*				Aberdeen.				Leith.				Month D.	D's Age at Noon
		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.			
		h.	*m*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*	*h*	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*		
Tu.	1	6	39	6	54	0	30	0	46	1	43	1	59	3	28	3	40	2	8	2	24	3	43	3	59	1	18·1
W.	2	7	10	7	26	1	3	1	20	2	15	2	32	3	56	4	10	2	39	2	55	4	14	4	30	2	19·1
Th.	3	7	42	7	59	1	37	1	54	2	48	3	7	4	23	4	37	3	13	3	31	4	48	5	6	3	20·1
F.	4	8	17	8	36	2	14	2	34	3	27	3	49	4	52	5	7	3	51	4	13	5	26	6	48	4	21·1
Sat.	5	8	57	9	20	2	57	3	21	4	10	4	34	5	21	5	43	4	37	5	4	6	12	6	39	5	22·1
S.	6	9	46	10	11	3	45	4	15	4	59	5	27	6	2	6	27	5	35	6	8	7	10	7	43	6	LQ
M.	7	10	49	11	30	4	48	5	25	5	59	6	38	6	57	7	32	6	49	7	33	8	24	9	8	7	24·1
Tu.	8	....		0	21	6	10	6	56	7	22	8	8	8	20	9	17	8	19	9	4	9	54	10	39	8	25·1
W.	9	1	10	1	53	7	38	8	18	8	56	9	38	10	9	10	57	9	45	10	18	11	20	11	53	9	26·1
Th.	10	2	32	3	7	8	54	9	24	10	14	10	45	11	35	....		10	48	11	15	....		0	23	10	27·1
F.	11	3	39	4	7	9	53	10	18	11	12	11	36	0	12	0	40	11	40	....		0	50	1	15	11	28·1
Sat.	12	4	31	4	54	10	42	11	3	11	59	....		1	5	1	30	0	4	0	25	1	39	2	0	12	29·1
Su.	13	5	15	5	36	11	23	11	43	0	21	0	43	1	50	2	13	0	47	1	8	2	22	2	43	13	N M
M.	14	5	59	6	20	....		0	5	1	5	1	24	2	34	2	51	1	28	1	48	3	3	3	23	14	1·2
Tu.	15	6	40	6	58	0	26	0	47	1	44	2	3	3	12	3	31	2	8	2	28	3	43	4	3	15	2·2
W.	16	7	16	7	35	1	7	1	27	2	21	2	40	3	49	4	5	2	48	3	7	4	23	4	42	16	3·2
Th.	17	7	54	8	12	1	47	2	8	3	1	3	21	4	22	4	37	3	27	3	48	5	2	5	23	17	4·2
F.	18	8	32	8	53	2	28	2	52	3	44	4	6	4	54	5	15	4	9	4	30	5	44	6	5	18	5·2
Sat.	19	9	14	9	37	3	16	3	39	4	27	4	51	5	32	5	51	4	53	5	19	6	28	6	54	19	6·2
Su.	20	10	2	10	29	4	5	4	34	5	15	5	41	6	16	6	43	5	47	6	18	7	22	7	53	20	FQ
M.	21	11	0	11	34	5	4	5	38	6	12	6	42	7	13	7	56	6	56	7	36	8	31	9	11	21	8·2
Tu.	22	....		0	13	6	14	6	50	7	15	7	52	8	44	9	34	8	16	8	56	9	51	10	31	22	9·2
W.	23	0	54	1	28	7	24	7	54	8	27	9	5	10	17	10	59	9	32	10	3	11	7	11	38	23	10·2
Th.	24	2	1	2	29	8	25	8	52	9	36	10	4	11	38	....		10	31	10	55	....		0	6	24	11·2
F.	25	2	56	3	22	9	15	9	38	10	29	10	51	0	7	0	31	11	17	11	36	0	30	0	52	25	12·2
Sat.	26	3	45	4	6	9	58	10	17	11	11	11	30	0	52	1	12	11	52	....		1	11	1	27	26	13·2
S.	27	4	25	4	44	10	36	10	53	11	48	....		1	29	1	42	0	9	0	28	1	44	2	3	27	14·2
M.	28	5	1	5	19	11	10	11	26	0	7	0	25	1	57	2	9	0	43	0	58	2	18	2	33	28	Ful
Tu.	29	5	38	5	58	11	45	....		0	44	1	4	2	25	2	39	1	14	1	30	2	49	3	5	29	16·2
W.	30	6	16	6	34	0	4	0	22	1	21	1	38	2	50	3	7	1	46	2	3	3	21	3	38	30	17·2
Th.	31	6	52	7	10	0	41	1	1	1	56	2	15	3	20	3	35	2	20	2	39	3	55	4	14	31	18·2

The times of high-water, nearly, at other places on the coast, may be found with the assistance of the above table within certain limits. Thus, the times in the Plymouth-Dock column are to be used for all places between the Land's End and Lyme Cob; and those in the Portsmouth column, for all places between Portland Bill and Beachy Head; by adding or subtracting the time opposite each place, according to the sign + or −.

The times of high-water at Plymouth Dock-Yard are to be used with the difference against the following places, to find the time of high-water there on the same day:—

	h. m.		*h. m.*
Mounts Bay and Lizard . .	− 1 3	Eddystone	− 0 18
Falmouth Harbour	− 0 18	Dartmouth and Torbay . .	+ 0 27
Fowey Harbour	− 0 18	Exmouth	+ 0 52
Cawsand Bay	− 0 10	Lyme Cob	+ 0 27

The times of high-water at Portsmouth Dock-Yard are to be used as above, for the following places:—

	h. m.		*h. m.*
Portland Bill	− 6 10	Cowes	− 0 55
Weymouth Harbour	− 5 10	Southampton	− 1 0
Christchurch and Poole Harbours	− 2 50	Bembridge Point	− 0 40
Needles Point	− 1 55	Selsea and Arundel Harbours .	+ 0 5
Hurst Chamber	− 1 40	Shoreham Harbour	− 0 25
Lymington	− 1 25	Beachy Head	− 1 25

VOYAGES AND MARITIME PAPERS.

I.—Original Papers on Naval Architecture. *By Commander John Pearse, R. N.*

No. I.—On the Centre of Rotation.

The very great importance of this point in Naval Architecture induced me at first to commence, and subsequently to continue, its investigation; and, having now completed twelve months of incessant application and study of the subject, in addition to repeated previous considerations of it, it will be seen that it has been fully examined.

During the last six months I have had recourse to various experiments, and can now undertake to demonstate by these means, on a mechanical apparatus, and on floating bodies, that the *metacentre*, or point of stability, is the *axis of rotation*, and not *the centre of gravity of the ship*, as is generally supposed.

The results derived from experiments on floating bodies perfectly agree with those which the mechanical apparatus exhibits. The principles of the two experiments are the same; they are governed by similar physical and mechanical laws; and the calculations by which the different points, and the moments of the powers are found, are precisely the same.

When the apparatus which I have constructed exhibits clearly, and in a most simple, mechanical, and practical shape, facts which are well known and established by the long practical experience of seamen; when it plainly shews the various effects produced by different dispositions of the weights in a ship—that the frame of a ship must be greatly strained, and its sailing much impeded, by placing great weights in the extremities—that the motion of rolling may be rendered slower, either by raising the weights or extending them in the same horizontal plane, the first diminishing the stability, the latter not—that weights situated in the same horizontal plane, whether collected near the centre or extended towards the extremities, either longitudinally or transversely, oppose *equal* resistance to *permanent* inclining powers; and, nevertheless, that weights concentrated near the middle oppose much greater resistance to *momentary* inclining powers than weights situated, in the same horizontal plane, near the extremities: when it clearly exhibits the physical properties of a floating body; how stability or resistance to *permanent* inclining powers is produced; the great difference between the effects of *permanent* and *momentary* inclining forces; and what generates resistance to a momentary inclining power, such as the effort proceeding from the shock of a sea, which brings into action the physical properties of the body; and, that these, by first resisting and overcoming the first effort, which is soon annihilated, acquire the power to produce succeeding motions, which may be considered as the natural and physical vibrations of the body: when the cause of all these facts is clearly proved by simple geometrical construction, and by calculation; and when they perfectly agree with results derived from experiments on floating bodies, it must appear very evident that the apparatus correctly exhibits the principles on which a ship turns, and that it is governed by the same laws, in making its vibrations, as other mechanical bodies.

It does appear very forcibly, that, hitherto, theory alone has been consulted in considering this important point, *and that its complexity has led many eminent authors into the error of confounding the centre of gravity of the ship with the centre of rotation.* The ship is in perfect equilibrium when at rest in its horizontal position. But when a new and additional force is applied, such as that of the wind, or the shock of a sea, then the equilibrium which before existed is destroyed, and consequently there must be a *new centre of gravity*, combining that of the operating forces, to preserve the necessary equilibrium. The *metacentre*, or *point of stability*, and which is evidently the centre of rotation also, is clearly the centre of gravity of this new system, or, of the whole of the operating forces; for, varying the powers on floating bodies of the most simple kind, in repeated experiments, proves that the vertical which determines the situation of the metacentre passes through the centre of gravity of a new system.

No mechanical body possesses the property of vibrating, whose centre of gravity is in the centre of rotation. Place it in any position, and it will remain at rest, and in perfect equilibrium. If the centre of gravity is above the centre of rotation, the smallest force will cause it instantly to upset. These are the very words of the most eminent authors on naval architecture. They tell us, "That the centre of gravity of a ship must necessarily be situated below a certain point, which they name the metacentre; that if the centre of gravity was situated in this point, the ship would remain at rest in any position it might be placed; and, that if the centre of gravity was above the metacentre, the smallest external force would cause the ship instantly to upset; and, consequently, that the centre of gravity of the ship must necessarily be situated below the metacentre." Therefore, whether it be a ship or any other mechanical body, its motions, as before observed, are governed by the same laws—stability being the resisting force which is opposed to a permanent or momentary inclining power; and the lower the weights are placed, or the lower the centre of gravity is situated, the greater will be the moment of stability, or the resistance to any inclining power; and which experience confirms.

The great importance of a correct knowledge of where the axis of rotation of a ship is situated, is clearly demonstrated by the consideration that the lateral effort of the water or resistance to lee-way will tend to augment, or diminish, the stability of the ship, according as the mean direction, or result of its effort, may pass above or below the axis of rotation. Consequently, as the *metacentre* in some of our ships is situated six feet and upwards above the centre of gravity of the ship, the mean direction of the lateral effort passing between the two points, and by supposing the centre of gravity of the ship to be the centre of rotation, would lead to a conclusion that the stability would be augmented by it; whereas the metacentre being the centre of rotation, *the stability would actually be diminished.* This is a proof why ships may be found to be overmasted, and no true cause can be assigned for it. On the same principle, the direction of an effort proceeding from the shock of a sea, passing above the centre of gravity of the ship, by supposing it to be the centre of rotation, would lead to a conclusion that the effort would cause the ship to incline to leeward; whereas the *metacentre being the centre of rotation*, the effort would, by uniting with the effort of the moment of stability, actually cause the ship to *roll to windward.*

That the mean direction of the lateral effort of the water passing between the centre of gravity of the ship and the metacentre, would diminish the stability, has been satisfactorily proved by experiment on a floating body. First, by inclining it by a weight, and then applying a lifting power *between the two points*, which increased the inclination considerably, and, consequently, diminished the stability. The lifting power was then applied *above the metacentre*, when the inclination diminished, and, consequently, the effort tended to augment the stability. The effects thus produced, by applying the power above and below the *metacentre*, prove it to be the *axis of rotation.*

All the efforts, or forces, which produce permanent inclination, or vibrating motion, are considered on the principle of the lever, and their moments are found by multiplying the amount of the weights, or of the absolute forces, by the distances of the directions of their efforts from the point of support or fulcrum, those distances being always perpendicular to the directions of the efforts of the weights or forces.

A ship, when inclined by the power of the wind, was considered by that eminent French philosopher, M. Bouguer, a lever of the *second* kind; by Chapman, the celebrated Swedish naval architect, a lever of the *second* or *third* kind. It is, however, very easy to prove it to be a lever of the *first* kind. By the laws of mechanics, the weight or pressure, on the point of support or fulcrum, of a lever of the second kind, is only equal to the weight of the body to be moved, minus the amount of the moving power; the weight moved being between the fulcrum and the moving power: whereas the pressure on the fulcrum of a lever of the first kind is equal to the weight of the body moved, plus the amount of the moving power; the fulcrum in this case being between the weight moved and the moving power.

A ship possesses the properties of a lever of the first kind when inclined, according to the method of Father P. Hoste, for ascertaining the moment of stability, by suspending a weight at the end of a spar projecting from the ship, and which is given us by M. Bouguer. Now, the direction of the effort of the inclining weight being perpendicular to the surface of the water, the whole of its effort goes to increase the pressure on the water, and, therefore, increases also the displacement of the ship; consequently renders it a lever of the *first* kind. The weight of the ship acting at its centre of gravity is the weight moved; the inclining weight is the moving power: between these two is situated the centre of effort of the water, which is the point of support or fulcrum to the lever, and this, as well as the increase of pressure, constitutes it a lever of the first kind. But P. Hoste, or M. Bouguer, have not related all the excellencies which this ingenious method possesses. A ship inclined in this way gives an excellent demonstration of what has been before related respecting the centre of gravity of a new system, namely, the direction of the effort of the weight of the ship, acting at its centre of gravity, is in *one vertical;* the direction of the effort of the inclining weight is in a *second vertical;* and a *third vertical*, situated between the two former, determines the situation of the metacentre. *The inclining weight multiplied by its horizontal distance from the vertical of the metacentre is equal to the weight of the ship multiplied by the horizontal distance of its centre of gravity from the same vertical.* This is a necessary consequence of the equilibrium, as well as a strong proof that the ship in this state is become a new system of efforts, and whose new centre of gravity is in the vertical which determines the situation of the metacentre. In fact, and as before observed, repeated experiments on floating bodies of the most simple kind prove it to be so. Here, then, is one reason why theory may have led authors into the error of confounding the centre of gravity of the ship with the centre of gravity of a new system of efforts.

Having ascertained the moment of stability at a certain inclination, by the method of P. Hoste, we may also, and agreeably to the laws of mechanics, find the amount of absolute force required to produce the same inclination at any given point on the mast, the direction of the effort to be perpendicular to it, by dividing the moment of stability by the distance of the point where the power is to be applied from the axis of rotation. This may also be ascertained by improving on the method of P. Hoste, and consistent with the laws of mechanics as well: namely, the direction of the effort of the inclining power is perpendicular to the surface of the water; *therefore, whether the inclining weight is suspended at the end of a spar projecting from the ship, or at the point on the mast which the prolonged direction of its effort would intersect, still, the directions of the efforts being the same, and at equal distances from the vertical of the metacentre, they would preserve the equilibrium at the same inclination;* and, consequently, by decomposing the inclining power employed, as by P. Hoste, that is, by laying off, on the vertical line which represents the direction of the effort, the amount of the inclining power taken from a scale of equal parts, and then forming a parallelogram, the side which is perpendicular to the mast will represent the direction, and the amount of absolute force required, at the point of intersection, to produce a like inclination; and the amount of this power is equal to that found by dividing the moment of stability for the given inclination by the distance of the point of intersection from the axis of rotation.

The power, however, applied in this way, and which is similar to the effort of the wind on the sails, is much less than the former, and in proportion to the increased length of the lever. The direction, also, of its effort not being vertical, a small part of it only tends to increase the displacement; and which is found, as before described, by decomposing the inclining power, and the perpendicular side of the parallelogram will represent the amount of the increase of displacement. Thus, it is evident, that a ship inclined by the power of the wind, or by the shock of a sea, acting *above the centre of rotation*, possesses the properties of a lever of the *first* kind. A sea striking a ship low, or a sea acting on either of its extremities, and producing a *lifting* power, renders it a lever of the *second* kind.

In ascertaining the amount of the inclining power at a given point on the mast, and in a direction perpendicular to it, by decomposing the vertical inclining power, the mean direction of the lateral effort of the water, or resistance to lee-way, is supposed to intersect the axis of rotation; in which case it neither produces augmentation nor diminution of stability. But, as before observed, the mean direction, or resultant of the lateral effort may act above or below the axis of rotation, and augment or diminish the stability. Consequently, it is of the greatest importance that we should possess a correct knowledge of where the centre of rotation is situated, and where the mean direction of the lateral effort of the water will intersect. These are important but simple facts; and it must appear very evident, that, without a correct knowledge of them, we can never expect to attain a correct system of masting, or the form which would combine all the qualities which it is necessary a ship should possess.

Notwithstanding the question of the centre of rotation of a ship has been made a very complicated one, and has been repeatedly considered during the last century, without any one having been able satisfactorily to decide the point; a century since, some were of opinion, but did not succeed in proving it, that the *metacentre* is the *centre of rotation;* and, although some of the present day cannot even agree as to what Chapman's opinion was on the subject, still, the question is very easily decided by experiment, and may be reduced to very narrow limits, namely. The whole moment of stability is the weight of the ship multiplied by the distance of its centre of gravity from the metacentre; therefore, when the whole of this moment is brought into action, the two points must be in the same horizontal plane, and, consequently, the ship on its beam-ends; therefore, the question is reduced simply to this, Which is the stationary point? Does the metacentre descend, to become horizontal with the centre of gravity of the ship; or does the latter rise, and attain the horizontal plane of the former? It is very clear, that the displacement of a ship cannot be increased except by the addition of an absolute weight, or a vertical pressure downwards, which is equivalent to it. Bouguer says, "The displacement is the same before and after the inclination of the ship, but that it would be increased or diminished if the ship turned on any other point than its *centre of gravity.*" This is, however, erroneous, for there is only one point about which a ship can make its vibrations, and preserve the proper amount of displacement, without rising or falling as it inclines; and this point is always situated too high for the centre of gravity of the ship. And Chapman tells us, "The ship would rise and fall to preserve the displacement, if its centre of gravity was below the plane of the load water-line; but that this would not happen if the centre of gravity of the ship is raised to the plane of the load-line." This is also erroneous; for, supposing the centre of gravity to be the axis of rotation, raising it to the load-line would only diminish the extent of the rise and fall.

The arguments, however, of those eminent men tend to shew that there is a certain point about which a ship can vibrate, and preserve the proper displacement, without rising or falling as it inclines; and it may be supposed, also, that they have confounded this point with the *centre of gravity* of the ship. It is very easy to prove, by simple geometrical construction, that this point is always situated too high for the centre of gravity of the ship, and, that if not exactly in the same point as the metacentre, still it will be very near it. It is, therefore, very clear, that the support of the water, which is the fulcrum to the lever, is as a fixed point, and cannot give way and admit the metacentre to descend and become horizontal with the centre of gravity of the ship; consequently, it is very evident, that the centre of gravity rises, describes an arch in doing so, and attains the horizontal plane of the metacentre. It is admitted, that the centre of a circular body is its metacentre. Let us therefore suppose a cask to be ballasted so as to give it good stability. That it may possess this property, its centre of gravity must necessarily be situated below the metacentre; then its physical properties will prevent it from making entire revolutions round its centre, and only admit of vibrations. But the situation of the centre of rotation will be the same as if the cask was wholly without stability; its place being governed and determined by the form of the body, and the action of the water on the part immersed, and entirely independent of the situation of the centre of gravity of the body.

Let us also suppose a mast to be erected, and a power applied to it sufficient to produce an inclination of ninety degrees, when it will be in the situation of a ship on its beam-ends. The centre of gravity, which, before the inclination, was below the metacentre in the same vertical, will, in this state, be in the same horizontal plane; and the cask will be a little deeper immersed, in consequence of the displacement being increased by the amount of the inclining power, and which depends on the length of the lever to which it is applied. And it is of no consequence, whether the centre of gravity is near the load water-line, or at the greatest possible distance below it, the situation of the centre of rotation will be the same, that, as before observed, being determined by the form of the body and the action of the water on the part immersed. The body, however, in its inclined state becomes a new system. That which was the centre of gravity before the inclination is no longer so. The body in its inclined state is in perfect equilibrium, in consequence of the equality of the two moments or relative forces, "the weight of the body multiplied by the distance of its centre of gravity from the metacentre being equal to the inclining weight multiplied by its distance from the metacentre;" and, *consequently this point is the centre of gravity of a new system, as well as the axis of rotation.* And, notwithstanding the form of a ship is very different from that of a circular body, still it is governed by similar physical and mechanical laws; and, as before observed, the most simple and variously repeated experiments on floating bodies, prove, that the new centre of gravity, or centre of gravity of all the operating forces, is in the same vertical as that which determines the situation of the metacentre: and simple geometrical construction will prove, also, that the *point round which a ship can make its vibrations, and preserve the proper displacement, without rising or falling as it inclines, is in the metacentre, or very near it.*

The moment of stability, and the various motions of a ship, being greatly dependent on the disposition of the different weights which it contains, is sufficient to shew how closely connected is the subject of the centre of rotation with that of the stowage of a ship; and that both are of such great importance as to merit being considered the foundation from which may arise future and certain improvements in naval architecture. The results of the experiments I have already made, and the consideration which I have bestowed on the subject, has led to a firm conviction, that, by similar experiments, many of the, at present, doubtful and complex parts of the theory may be rendered much clearer, and more applicable to practical purposes.

The accompanying drawing represents correctly, on a reduced scale, some of the experiments on floating bodies before alluded to. Weight of the model, 361 ounces; *g*, its centre of gravity; *d h*, water-line when inclined. It exhibits an inclination of 22 degrees, produced by a weight, *w*, of 32 ounces, applied at *k* to a rod projecting from the model, and agreeable to the method of P. Hoste for finding the moment of stability. The model in this state was in perfect equilibrium, in consequence of the equality of the two moments or relative forces, namely: That of the inclining weight, *w*, multiplied by its distance, *a b*, from the vertical, *m n*, of the metacentre being equal to the weight of the model multiplied by the distance, *g c*, of its centre of gravity, from the same vertical, *m n*; and, consequently, the new centre of gravity, or centre of gravity of all the operating forces, is in the vertical, *m n*, that which determines the situation of the metacentre, *m*.

The vertical centre of effort of the water is also in the line *m n*, and directly opposed to the centre of effort of the weight of the model and the inclining power; and, being situated between the weight moved and the moving power, as well as the pressure and displacement being increased, as may easily be imagined, by the addition of the inclining power, it is consequently the fulcrum to a lever of the first kind. Dividing the moment of stability by the distance, *m o*, will give the amount of absolute force required at the point *o*, and in the direction *o p*, to produce the same inclination: and this, for the reasons before given, may also be found by decomposing the vertical inclining power of 32 ounces applied at *k*, namely: Let *o q* equal 32, and the side, *o p*, of the parallelogram will represent the amount and the direction of the force required, and which is equal to that found by dividing the moment of stability by the distance *m o*.

The effects of powers applied in this way would be similar, and may be compared to that of the wind on the sails; and, by decomposing the inclining power, *o p*, the side, *o s*, of the parallelogram will exhibit the amount of increase of displacement which a power so applied would produce at the inclination represented. And, as the centre of effort of the water, which is the ful

NAVAL ARCHITECTURE
Centre of Rotation

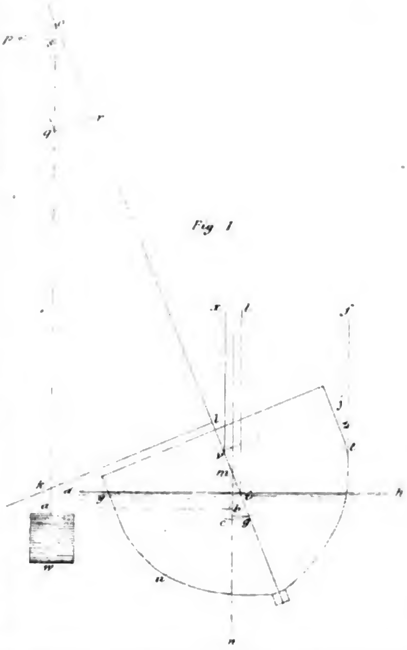

Fig 1

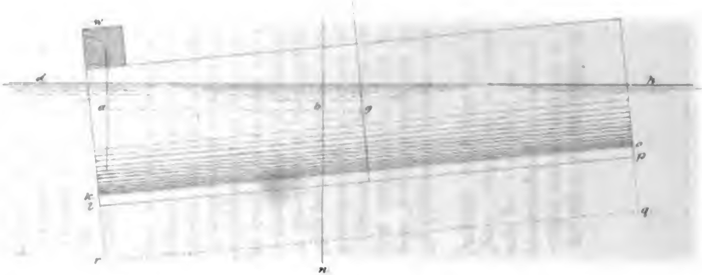

Fig 2

Day & Haghe Lith^rs to the King [illegible]

Pub^d [illegible] 1835

J. Bradbury Lith

crum, is, clearly, in this case, between the weight moved and the moving power; and, as the pressure on the point of support is increased, it is very evident that a ship, when inclined by the power of the wind, possesses the properties of a lever of the first kind.

It is very plain, that the metacentre *m* is the centre of gravity of the operating forces; its situation being determined by the position of the vertical *m n*, which passes through the centre of effort of the water, renders it the point of support, or fulcrum; and the constant equilibrium which exists, in consequence of the equality of the relative inclining force of the wind and the moment of stability of the ship, as well as the impossibility of the support of the water giving way, proves it to be the point on which the ship turns, and the axis of rotation. When the model was inclined as represented, a lifting power was applied at *i*, in the direction *i t*, which increased the inclination, and consequently diminished the stability; and it must appear very plain, that an effort applied at *u*, in the direction *u i*, would produce the same effect. A lifting power was then applied at *v*, in the direction *v x*, which diminished the inclination, and consequently increased the stability; and an effort applied at *y*, in the direction *y v*, would produce the same effect.

These experiments not only shew the effects which the lateral effort of the water, or resistance to lee-way, may produce; but the effects produced by applying the lifting power above and below the metacentre *m*, prove it to be the axis of rotation. The model was then placed in an upright position, and with the side *e j*, well greased, to bear against a piece of plate glass. A power was then applied to each end at *m*, in the direction *m z*, but no inclination proceeded from it. By applying the powers at *i*, in the direction *i e*, the model inclined the way represented in the drawing; and when applied at *v*, in the direction *v j*, it inclined the contrary way; proving *m* to be the axis of rotation. A lifting power of 48 ounces, by a spring-balance, was also applied at *e*, in the direction *e f*, producing an inclination of 22 degrees; diminishing the displacement, and, consequently, the pressure on the water, equal to the amount of the inclining power; and this, as well as the weight moved, being between the fulcrum and the moving power, rendered it a lever of the second kind; and, in this case, after deducting 48 ounces, which was supported by the lifting power, from the whole weight of the model, the centre of effort of the remaining weight, or of the pressure on the water, was in the vertical *m n*, which determines the situation of the metacentre.

Plymouth, *July* 29, 1833.

(To be continued.)

II.—THE COCOS ISLANDS—INDIAN OCEAN. *Extract of a Letter from an Officer, late of His Majesty's Ship Cruiser.*

[M. Chamisso, the celebrated naturalist, and companion of Kotzebue, has given so interesting an account of the origin and formation of an island by coral insects, that we cannot forego the present opportunity of quoting it. In conjunction with the account of the Cocos Islands, it will, no doubt, be acceptable to our readers.]

THE Cocos are a most interesting group of coral islands, in the 13th degree of south latitude. I stayed there two days, and was never more interested with any thing in my life. These islands have been formed entirely by sea worms, and consist of nothing else but a prodigious accumulation of white coral formed by these insects, and constituting the casements in which they live. I had formerly read an interesting article in the Quarterly, on the wonderful formation of these islands, emerging as they do from the fathomless ocean, and produced entirely by the incessant and accumulated labours of myriads of insects, many of them so small as hardly to be perceptible to the human eye. What is singular in the labour of these minute architects is, that their mansions, so soon as they rise above the high-water mark (and they are always building upwards) become the tombs of their tenants, for then they die.

Every part of these islands is so fully and thickly covered with cocoa trees, that it is a work of considerable labour to make way through them. About nine varieties of other trees are found intermixed with these, palm trees, &c.; but, comparatively speaking, these form only a very small part of the verdure of the islands. It has been ascertained that the seeds of every tree or shrub that grows in the island, will bear the action of the sea water, without losing its germinative properties, so that no sooner have the coral masons completed their labours, than Providence performs the rest; and I have no doubt that in the same way have innumerable productions of this hemisphere been transplanted by insects and wind from one sea to another. In order to account for the exuberant vegetation which I have mentioned, I should add, that fresh water is found in profusion throughout the islands at about two feet below the surface.

The number of these islands is, I think, about twenty, the largest being about ten miles long. They are all very narrow, being about a quarter and half a mile across, and the whole group extends about twenty miles in length. All the islands are connected by narrow causeways, fordable at low water. There is one exception, however, to this rule; and it is between the two islands which form this exception, that the passage runs, which leads into the basin, a circular space, about twelve miles wide, shallow in all parts, except the centre, where is the anchorage in four or five fathoms water. The sea here is as clear as a mirror; and, according as the formation of the bottom varies from coral to sand or clay, so the tints of the water assume every imaginable variety of blue and green. Occasionally it is of the very palest hue, sometimes it is blended into yellow, the dark and waving foliage of the all-graceful palms, varied by the occasional snow-white beach of coral sand, all tend by the contrast they afford to complete the effect of this enchanting landscape. As we dropped our anchor, I could not but think of the scene in the Tempest, "Safely in harbour is the king's ship, there she's hid."

The Cocos were uninhabited till a few years ago, when Mr. Hare and Captain Ross, the joint owners of the Borneo, settled here with about forty Malay servants, male and female, and sent the ship home to England. They have pigs and poultry, the latter in amazing numbers. Ducks also thrive. On what do you think? On cocoa nuts, and nothing else. Every bird and animal they have is fed on this alone. You may judge of the myriads of nuts which must be wasted here, when I tell you that a middling-sized tree will produce a hundred nuts at a crop, and that the trees bear all the year round. What a fine field would have been presented by these islands for a Salvator or Claude.

The basin is plentifully stocked with turtle; but, instead of turning them, as is done at Ascension, it is the custom to send a few hands with poles in a small punt; and when they see one of these unwieldy monsters, they give chase, and literally worry him till they effect his capture, always taking care to keep to the one they are in chase of, and not to be diverted from the pursuit of him by another. This they are enabled to effect by the clearness of the water, together with its shallowness, which allows them to keep sight of the unfortunate turtle till they catch him.

An amazing variety of sea-fowl swarm on the trees, and roost on them at night, notwithstanding their web feet; this was a novel sight, but natural enough when one considers that there are no cliffs here, the height of the Islands not being above 10 or 15 feet above the level of the sea. The birds are actually so tame, that you may take them off the branches with your hand. One beautiful variety of gull, resembling a swallow in shape, lays its eggs on the branches of the cocoa-tree; and so ingeniously do these birds contrive to secure their nest-full of eggs, that though the winds are high every evening, and the trees constantly waving about, the eggs are never dislodged, but are hatched by them in perfect safety.

The springs on the Island rise and fall with the tide, the difference between high and low water in the basin being about five feet. A line of shelving rock, extending outwards from 50 to 100 yards, surrounds the outer or sea-front of all the Islands. The surf is high at high-water, but at low-water a person may wade to the edge of the margin of this coral bank, and absolutely look down into a sea out of soundings; so small is the base of the group, compared with its upper surface, and so little do the sides diverge from the perpendicular line. One shock of an earthquake has been felt since the present inhabitants settled there. Fish are plentiful, mullet in particular; these are cured with salt, which is obtained by boiling the sea-water. The whole of the Islands are swarming with land crabs, and, what is more singular, a very large-sized craw-fish, resembling a lobster, about 2½ or 3 feet long, excellent eating; and the tail, filled with a fat substance, is as useful as the tails of the Cape sheep, in cooking. The land kail is the only land bird which is found. Locusts are here, but not numerous. No serpents, or venomous reptiles, have been seen, and no wild beasts have been found on any of the Islands.

The low islands of the South Sea and Indian Ocean mostly owe their origin to the operation of several species of coral. Their situation with respect to each other, as they often form rows, their union in several places in large groups, and their total absence in other parts of the same seas, make us conclude that the corals have founded their buildings on shoals in the sea; or, to speak more correctly, on the tops of mountains lying under water. On the one side, as they increase, they continue to approach the surface of the sea; on the other side, they enlarge the extent of their work. The larger species of corals, which form blocks measuring several fathoms in thickness, seem to prefer the more violent surf on the external edge of the reef; this, and the obstacles opposed to the continuation of their life, in the middle of a broad reef, by the amassing of the shells abandoned by the animals, and fragments of corals, are probably the reason that the outer edge of the reef first approaches the surface. As soon as it has reached such a height, that it remains almost dry at low-water at the time of ebb, the corals leave off building higher; sea-shells, fragments of coral, sea-hedgehog shells, and their broken off prickles, are united by the burning sun, through the medium of the cementing calcareous sand, which has arisen from the pulverization of the above-mentioned shells into one whole or solid stone, which, strengthened by the continual throwing up of new materials, gradually increase in thickness, till it at last becomes so high, that it is covered only during some seasons of the year by the high tides. The heat of the sun so penetrates the mass of stone when it is dry, that it splits in many places, and breaks off in flakes. These flakes, so separated, are raised one upon another by the waves at the time of high-water. The always active surf throws blocks of coral (frequently of a fathom in length, and three or four feet thick) and shells of marine animals between and upon the foundation stones; after this, the calcareous sand lies undisturbed, and offers to the seeds of trees and plants cast upon it by the waves, a soil upon which they rapidly grow, to overshadow its dazzling white surface. Entire trunks of trees, which are carried by the rivers from other countries and islands, find here, at length, a resting place, after their long wanderings: with these come some small animals, such as lizards and insects, as the first inhabitants. Even before the trees form a wood, the real sea-birds nestle here; strayed land-birds take refuge in the bushes; and at a much later period, when the work has been long since completed, man also appears, builds his hut on the fruitful soil formed by the corruption of the leaves of the trees, and calls himself lord and proprietor of this new creation.

III.—Engines in Steam-Vessels.

To the Editor of the Nautical Magazine.

Sir—The pages of your Magazine have, from time to time, presented us with some well-digested opinions, and facts, concerning steam-vessels, their nature, furniture, &c. Upon the last that appeared, I am induced to offer a few observations, not doubting that your valuable correspondent, "John S. Enys," is well acquainted with the requisite duties which devolve on the makers and drivers of a land-engine; but, with the corresponding functions of the makers and engineers of sea-going vessels, I am inclined to think experience would add no unworthy mite to his already rich store of information. Although he does not profess to address "scientific readers," still I trust a few brief remarks, founded upon experience, will not be altogether unacceptable to you.

With regard to the circular form of boilers, few are to be found (capable of forming a correct judgment) who do not admit its superiority over the rectangular shape, for strength. With regard to the generation of steam, I entertain a similar opinion to Mr. Enys, when he says, that "the effect may in some degree be measured by the extent of flue surface in contact with water; and, in this respect the *square fire-places* and flues *have an advantage*." But I do not feel inclined, in the absence of facts, to subscribe hastily to what follows: "Which is, however, more than counterbalanced by the deposition of *salt* on the flat top of the fire-place, &c." Here I would pause a moment, to ask what is to be understood by the word "*salt*," as I am aware of its indiscriminate use by some, to include all the depositions formed by the evaporation of sea-water in the boiler, and, in fact, it is chemically correct: others confine the term to common salt (muriate of soda.) Now, if it be the usual deposits, such as sulphates and muriates of lime, magnesia, soda, &c. intimately mixed, and assuming a stone-like appearance, experience shews the *equal liability* of the sides and tops of the flues, and also the bottom of the boilers, to accumulate it; so far from being "entirely cleared" by "the operation of blowing off," it is found in a dense mass from the bottom of the flue to that of the boiler, and even half-way up between the flues, and not to be extracted until the boilers are broken up, (I allude to those of the Meteor, broken up in Portsmouth Dock-yard,) while the tops of the flues had just a thin scale on them.

If the salt alluded to was common salt, (muriate of soda,) the engineer who would so far risk the lives on board, or at least the destruction of the valuable property committed to his care, deserves severe punishment and lasting disgrace; which, not even the superior knowledge that your correspondent is desirous the commanding officer should attain, nor all his vigilance, could contravene. Hence the absurdity of ruling with a "tight hand and severe curb" those who have the safety of the vessel, and the lives of those on board, in their hands: there are men to be found, in whom are combined legitimate subordination, and intelligence; such intelligence as those in command of steam-vessels cannot attain without travelling the rugged path of experience—there is no royal road for *them;* for it is possible some untoward event may occur, far on the wide and pathless deep, and from Tom Smith's forge. When the "taught hand and severe curb" may have put the engineer in irons for seeming contumely, and the tragedy of William Tell may be reacted. In fact, there can be no parallel drawn between the engineers of our sea-going steam-vessels, and the person who has to stop and start the Cornish engines. At most, this operation seldom happens more than once a day, whilst the steam-boat is continually requiring the skill of the engineer.

It does appear to me, that the supreme authority of the commanding-officer may be maintained, by causing the first engineer to keep an account of the performance of the engines, to be registered every three hours, or more; thus, the number of strokes per minute, (average,) the strength of the steam as indicated by the steam-gauge, and the state of the vacuum as indicated by the barometric column, with remarks on her working, &c. These are under the immediate eye of the commander, and can be checked by him, and consequently understood without much difficulty, and from which he can draw an approximate conclusion with regard to the state of the engines, and, *assisted by experience, also, the situation of the vessel.*

With regard to the expansive business, about which our Cornish friends have said so much, the advantages held forth are, economy in boiler's space of power, and consequently fuel; and two examples are adduced, the Herald and Cornubia, to prove the one, and the Echo the other. With regard to space, the Meteor, before alluded to, has two boilers, which, united, is *one foot six inches less in breadth*, and nearly *four feet shorter*, than those of the Herald, whilst the diameter of the cylinder is *the same*. The Meteor's engines and boilers were made by Messrs. Boulton and Watt. So much for economy of space.

On the economy of power in the example of the Echo, &c., a few words may be said.

How easy it is to guess that the writer never was in a sea "sufficiently high to make it untoward to wear a 10-gun brig like the Echo." She was stayed *by the order*, "Raise the steam to fifteen pounds per square inch." Again, "I would prefer shaking a vessel to pieces with forty or fifty pounds steam, &c." This, it appears, is to be raised from ten pounds in a steam-boat, and in a storm! Not so easy a matter. Let us look to the *modus operandi*, and suppose the steam is admitted by the expansive valve into the cylinder during one-third of the stroke, it consequently expands two-thirds, that is, from nine to three pounds per square inch. Now, if the condenser and air-pump be of the proper proportion here, how will the steam be got rid out of the cylinder, when it is raised to the fifty pounds; expanding down to about sixteen pounds, how is injection-water to be got into the condenser, and, when in, how exhausted by the air-pump, only large enough before? or, are they to be made large enough to meet these exigencies? I leave it to practical men to treat these anomalies as they deserve. Again, in beating off a lee-shore, it is well known "you must put her nose to it." Is it unfrequent, under such circumstances, I humbly ask steam-boat navigators, for the bow to be upon one sea, and the afterpart of the vessel on another, with the paddles in the trough, "beating the air." Under such circumstances, what would become of even Boulton and Watt's engines, renowned for their strength, supposing *five times* their calculated power to be applied, devoid of a corresponding resistance, and as suddenly overwhelmed by it; or, to meet all this, are our engines to be made *five times stronger, and larger, and, consequently, heavier*, than they are, *to do the same duty*.

Neither can I applaud the idea of being drowned in deep water, in preference to a chance of saving one's life "on the beach," though a lee shore. Nor can I conform to the opinion of your correspondent, that high is more liable than low pressure steam to prevent the motion of the vessel in a sea-way affecting the water in the boilers; although it must be admitted, that this desideratum is very requisite, to render these boilers efficient, the tubes being covered, at most, with about four inches of water, which, if removed from the surface of the plates exposed to the action of the fire, are liable to be damaged, and exposed to serious results.

I am, I assure you, sir, much concerned for the disproving the *assertions* of your correspondent, aware, as I am, of the extensive circulation of your valuable miscellany in the Royal Navy, and that excellence is there the stimulus to exertion. Their specious

appearance is capable of alluring the unwary, and might, if attended to, produce consequences perhaps diametrically opposite to the expectations of both parties. At present, I will not add more, fearing I have already trespassed too far on your notice.

I am, &c.

Plymouth, Sept. 1833. W. E. Gill.

IV.—Vessels Built and Registered.

An Account of the Number of Vessels, with the Amount of their Tonnage, that were Built and Registered in the several ports of the British Empire, in the year ending the 5th January, 1833.

—	GREAT BRITAIN.		IRELAND.		ISLES OF GUERNSEY, JERSEY, AND MAN.		TOTAL.	
	Ships.	Tons.	Ships.	Tons.	Ships.	Tons.	Ships.	Tons.
Under 50 tons......	189	5,544	15	414	12	299	216	6,257
From 50 to 100 tons	200	13,868	3	208	4	306	207	14,382
— 100 to 150 —	74	9,076	2	244	3	336	79	9,656
— 150 to 200 —	68	11,679	2	377	—	—	70	12,056
— 200 to 300 —	137	33,603	3	666	6	1,354	146	35,623
— 300 to 400 —	31	10,340	—	—	—	—	31	10,340
— 400 to 500 —	7	3,048	—	—	1	440	8	3,488
— 500 to 600 —	1	501	—	—	—	—	1	501
Above 600.........	1	612	—	—	—	—	1	612
Total........	708	88,271	25	1,909	26	2,735	759	92,915

Note.—The returns from the plantations being incomplete, no correct account can be rendered for that portion of the British Empire.

	Vessels.	Tonnage.
Number of Steam-Vessels built and registered in the United Kingdom in the year ending 5th January, 1833........	33	2,851

V.—Notes on the Gulf of Arta. Trip to Nicopolis.

The necessary arrangements for our expedition being completed, we started on the 26th of May, with three weeks' provisions, and tents, intending to encamp when it might be necessary, in our progress through the Gulf of Arta. A spot was chosen about a mile and a half to the eastward of the town of Prevesa, at the entrance of the gulf, where we pitched our tents.

On landing, almost the first thing we saw was a hedgehog, which, by way of commencement, was speedily skinned, and prepared for dinner. A Turk, one of the consul's guard, was sent with us, as a guide and interpreter, and in the evening we got our passports, under the hand and seal of the Bey. Our guide appeared to be a very intelligent man; he had been fourteen years in the English service, and in his travels had visited France. He was a Morest of Patras by birth, but a Turk in every other sense.

Fort La Punta is situated on the south point of the entrance of the gulf, and, like all others belonging to this nation, scarcely deserves the title of a fort. Its shape was, perhaps, intended to be triangular, but the engineer had failed in his attempt, and had used so little judgment in planning it, that the breeches of the guns on each side of the salient angle were in contact with each other. The artillery, as usual, were of divers calibre and dimensions, and one had suffered the loss of part of its muzzle from the reinforce ring outwards. The occasion of this was ridiculous enough. It appears, that, about eighteen months ago, five or six Greek mysticoes entered the harbour of Prevesa, to pass up the gulf, which the Turks endeavoured to prevent, by opening fire upon them from the forts. Instead of the shot striking either of the mysticoes, (all of which passed up unhurt,) several of them from this very fort found their way into the town of Prevesa, doing, of course, great damage. So, by way of being even with their friends here, who were thus dealing out the proofs of their zeal, one of the batteries of the town sent a shot into the Fort of La Punta, which struck this gun. We were not informed how many Turks' heads it carried away, but the effects were evident on the gun. No less than 3,000 men were firing musketry on this occasion upon the unfortunate Greeks, who calmly and quietly run the gauntlet of the whole.

When our day's work was over, we took our dinner in the camp, which made rather a respectable appearance, three tents in a line, though probably there was not that regularity and order which would pervade a more orthodox encampment. The scene was lively and amusing beyond measure, and a pleasant change for us from the constant sameness of a ship. The various occupations and amusements of the party would have made a most excellent subject for the pencil of Hogarth himself: some were playing like so many children such games as leap-frog, hunting each other, to stretch their legs; some running after curious insects; some bathing; some doing the polite to an old sedate Turk; some cooking; and others drawing. The hedgehog caught yesterday formed one of our dishes, though I cannot say I much liked it, probably more from fancy than any thing else.

It is strange, notwithstanding the Turkish creed of "fatalism," (for they say that God has given them this country, and will preserve it for them,) that such dread of foreign force interfering with their possession of Greece should prevail among them. They appear to be conscious of their own weakness, though far from willing to admit it. The Greek mysticoes daily frequented the narrow entrance into the gulf beating up with the sea breeze even to Prevesa, then bearing up again for Vornizza. What their object could be, further than that of ostentation, it is impossible to imagine, but it must be allowed that it was bad taste on their part.

On the 28th, after a dinner of land-tortoises, we broke up our camp in the evening, and went about three miles farther to the south-east, along the shore of the gulf to the bay of Schiafidacchi, and encamped again for the night. I scarcely think that the oldest campaigner could have wished more celerity in erecting our temporary dwellings. Each boat had its tent; and the emulation between the different crews to be the first ready, made them very quick in their operations.

In the forenoon of the following day, we walked out to a cottage most beautifully situated in a valley between the two shores of the gulf. There was more order and cleanliness about it than we were prepared to expect, though not sufficient to come up to our English ideas of rusticity. The old Greek lady, who, during her husband's absence, was acting in command, received us very graciously. The garden was extensive, and full of fruits, lemons, pears, apricots, pomegranates, mulberries, figs; all promising an abundant return in the course of the season. Olives, of course, were, like cedars in Bermuda, every where to be found. In this country they are not considered as a fruit, but as a vegetable. The myrtle shewed itself every where, growing spontaneously in the most exposed situations, and scenting the air with its fragrance. How truly applicable are the lines of Byron here–

> "Know ye the land where the cypress and myrtle
> Are emblems of deeds that are done in their clime;"

and the correctness of the noble bard is evident, even to the last line—

> "And all save the spirit of man is divine."

The Albanians may be considered as a nation of robbers. Plundering is with them an honourable profession; and those who have courage to fight for the fruits of another's industry need give themselves no further trouble to gain a livelihood. True it is, that they are seldom or never guilty of petty pilfering; their work is always done on the grand scale. The old lady of the house, who is a Greek, made bitter complaints of their depredations on her fields and orchards; the very idea of them seemed to give her a distaste for the delightful scenes and prospects before her; for, as she said, "when my fruit and corn are ripe, perhaps the Albanians will come and take them from me." It is this alone, this insecurity of property, and even of life, that prevents the cultivation of so fine and beautiful a country as this—capable, as it is, of being made the most productive in the world. The soil is generally loose, and the hills stony, but these obstacles might easily be overcome. At this farm was a large colony of bees, under tall square boxes, with small apertures at the bottom for entrance, and two cross sticks about half way up.

It is impossible to find a richer field for the entomologist than this country affords: in numbers and variety of insects, it cannot be surpassed. Fish abound in the lake below Schiafidacchi, and throughout the gulf. Red mullet, frequently one pound in weight, and prawns, also of a very large size, and of a fine flavour.

About 10 A.M. just before the sea-breeze set in, the thermometer stood at 97° in the tent. On ascending a hill over the north point of entrance to the gulf called Schiafidacchi Mount, our way lay among thistles and briars, over stones, &c.; and, although the toil of reaching the summit, without a path, and under a burning sun, was not a little, we were well repaid for our trouble by the extensive view we obtained of the gulf. The bottom of it, to the south-east, was not visible, but all the northern shore lay beneath us, and appeared to be very low, with extensive sand-banks lying off it. From hence we made a retrograde movement into the estuary of Vatti, to the eastward of Prevesa, and encamped under a group of olive-trees near some ancient ruins. These are evidently Roman, by the form of the bricks; but a very small portion of them can be seen above the weeds. Traces of more may be discovered among the mounds, which are now covered with verdure. Some persons would have supposed that Actium occupied this site, notwithstanding the authority of Polybius, who states, that, after the capture of Ambracus by Philip of Macedon, he marched to the entrance of the gulf, to *cross over* to where Actium was situated. These ruins, now called Margaroni, are certainly not extensive enough to warrant the conclusion of their being those of Actium, or any other large town here. It appears more likely to have been the port to Nicopolis, as the estuary is deep and well sheltered. The sea-shore near Nicopolis, of course, was not a safe place for vessels, having neither port nor bay; and this is the nearest and most commodious approach to the town, except by going into the gulf, and coming up to the eastward of the town, where the shore, by reason of its being low and shallow, does not appear favourable for the conveyance of merchandise.

Every person almost, up the Mediterranean, gets a touch of the mania for antiquarian research, and he finds himself making collections without intending it; even the seamen imbibe some idea of the sort, and frequently bring us specimens of what they consider to be "*hanticks*." Any piece of money that has, unfortunately, been maltreated, is treasured up for us with as much care as if it were a coin of one of the most ancient Roman emperors.

Sunday, 30th May, being the day in which, it is written, "Thou shalt do no manner of work," was fixed upon for seeing Nicopolis, now called Paleo Kastro, or the Old Castle. Having obtained horses, about 10 o'clock we set out, in a party of seven, accompanied by four Albanians on foot, taking a tent with us, and other requisites. The very sight of the saddles was enough to damp all our ardour for riding. In their construction, the greatest care seems to have been taken, that the horses' backs should not suffer at the expense of those who were to mount them. Six rough sticks formed the seat! but, as the natives always carry their capotes and floccatas, with the assistance of these we contrived to make them tolerable. It is the custom of the horsemen here seldom to exceed a walking pace, not caring so much for the time expended as they do for their horses. There is, however, a reason for this. No such conveniences as post-houses are to be found in this country; therefore, as they have to perform long journeys, it proceeds from a proper regard for the animals, and these are capable of bearing a great deal of this kind of patient fatigue.

The distance we had to travel was about four miles, over a beautiful plain scattered with olive trees. The first ruin we arrived at was an arch which had probably been a gateway; and, about a quarter of a mile further, we found ourselves riding over the walls of houses, and in the midst of masses of ruins. We put up our horses under some arches, a little off the road to the left, within the walls of the Acropolis, (which, by the way, instead of being square, is octagonal,) where was a beautiful stream of running water close by our feet. We then started for the principal and most conspicuous part of the amphitheatre, about half a mile distant, situated on the first ascent of a low range of hills to the northward of the town. It is in a tolerably good state of preservation; some of the highest arches at the back, or upper part, are still perfect. Its form, of course, is semicircular. Nine rows of seats are scarcely perceptible, from the length and quantity of weeds by which they are nearly covered. To each three rows is a separate door, or rather two, one on each side. In these archways, the plaster or stucco still remains, and is so excessively hard that a knife can scarcely make a mark on it. I have not given a plan of this theatre, on account of its similitude to others so often described and drawn. The numbers of continental travellers who are gratified with these sights make such remains of antiquity as common as the every-day occurrences of life. Most of those in Italy are built of stone; this, however, is nearly entirely of brick, with the exception of the angles. The bricks are of a larger size than those used for the more common buildings, such as dwelling-houses, &c., though we observed that they were not regular in size: they have attained a hardness equal to stone. Being built on the ascent of the hill, the back walls required but little elevation; they were about thirty feet high, while the front must have been double that height, or nearly so. There are three entrance-doors to the front of the area, and on either side one, which probably led to the room which contained the wild beasts; and the doors to the three different sets of seats are not immediately over each other. The direction of the front is about north-west, (mag.) and there appears to have been wings on either side, probably with the steps to ascend to the higher seats. This, I remember, was not the case at Pompeii, where the ascent from one to the other is within the building. A little to the left, and just before arriving at the theatre, from the city, is a long, oval enclosure, in the same direction with the front of the theatre; it might escape notice from being so much covered with weeds, and appearing like a mound formed by a mass of ruins; but, on ascending its sides, a well-formed and very perfect building is visible, either a gymnasium or a forum. Its length is about 500 feet, extreme breadth about 150 feet, and the walls about 20 feet high. Scarcely a vestige of the materials with which it is built can now be seen, for the weeds, excepting at the western end, where there are three doors.

We returned into the Acropolis, to get our dinner, and found a whole lamb roasting, à la Albanese, before a fire of wood, spitted with a long stripped branch; and by the side of it was a small spit of the same sort, with all the viscera fastened on by the entrails! This was the *bonne bouche* of our Albanian escorts. Some fern made our seats and table, on which was placed the smoking lamb. Hunger is known to be a good sauce, particularly on these sort of expeditions, otherwise we might have found some difficulty in making up our mind to the manner in which our fare (good in itself) was set before us. The level of the ground at present is above what it was originally, from the masses of ruins; and, when riding along the road, the tops of walls are distinctly visible. We observed, just after entering the enclosure supposed to be the Acropolis, a very curious shaft, running in a slanting direction. The upper part had been hollowed out of a solid stone, the aperture being about two feet in diameter. We had no means of measuring its depth; indeed our present visit was merely preliminary, to obtain a general idea of the place, purposing with more time and means to examine it minutely. Our halting-place was on the south-east side of the Acropolis, and supposed to have been a temple. It is attached to the wall of the pentagon. We returned about 5 P.M. The evening was cool, and, had it not been for the awkward manner in which we were mounted, the ride across the plain between Prevesa and Nicopolis, under the olive trees, would have been pleasant.

(To be continued.)

VI.—The Merchant Seaman's Orphan Asylum.

"My hardships since, I will not tell;
But, now, no more a parent's joy;
Ah! lady, I have learned too well
What 'tis to be an orphan boy."

To the Editor of the Nautical Magazine.

Sir—It is, no doubt, a useful and pleasing occupation to point out to the mariner the hidden dangers of the ocean; but another equally worthy of your attention, would be to aid the excellent designs of an institution which cherishes, and rears up to manhood, his helpless offspring. The seaman who may have perished amid dangers which could not have been averted by human means, leaves his orphan with claims of no ordinary kind to his country's care. Food and raiment is all that is asked, till the child can take his father's place, and, like him, can "brave the fury of the raging storm, and dare the boldest efforts of his country's foe."

Will you, then, Mr. Editor, kindly permit a friend to the orphans of British seaman to advocate their cause before the British public, through the medium of your pages, and to say a few words on the benevolent purposes of the Merchant Seaman's Orphan Asylum.

You are aware that the moral and religious improvement of seamen has received more attention for the last fourteen years than ever it did before. Not only in this country, but, what is worthy of observation, almost simultaneously in the United States of America, there arose a strong public impression, that seamen had been much neglected, and that christian duty demanded attention to their moral condition.

In consequence of this impression, and encouraged by a desire among seamen to receive religious instruction, the Bible and the Tract Societies made large grants of books. Ships, on their departure for a voyage, were frequently supplied *gratuitously* with the sacred scriptures, for the use of the crews in their leisure hours; and the observance of the sabbath by social worship at sea, when the weather permitted, was recommended to the ship-masters. In many cases, to the comfort of the commander, and his officers and men, this practice has been followed; and, by inducing better discipline and more cheerful subordination, the safety of *life* and *property* was thereby improved.

About the same time it was noticed, that few sailors were ever seen in churches, or in other places for social worship, and, by way of experiment, a large ship (H.M.S. Swift) was purchased, and at considerable expense fitted as "a Chapel for Seamen." Such an accommodation was gratefully received by them, and they visited the vessel while she was fitting, and, when ready to be brought to the appointed moorings on the Thames, many volunteered their services to take her to them under the care of a *volunteer* pilot. They have also, ever since, rendered their services gratuitously in taking care of *their* chapel.

The chapel on board the Swift was opened in 1818, and has been since then, and still is, attended by sailors. This chapel, and the episcopal floating church since moored near to it, are the resort of sailors frequenting the Thames, whenever their duty and opportunity permit. And well have they answered the pious purposes of the projectors; for since then it has been observed, that even sailors, in their proper costumes, the blue jacket and trowsers, are seen in most of the churches and other places of worship on either side of the Thames. This example has been followed in all the large outports of the kingdom, and in our distant colonies; while the noble exertions of many people in the United States of America have been found in unison with those of their mother country. By these combinations, the common seaman is now impressed with a sense of his moral and religious duties, in which he is happily encouraged by the good example of his commanding officers.

It is a saying of the highest wisdom, that "a good tree will produce good fruit." It is therefore no matter of surprise, that this attention to seamen should have been accompanied by a feeling of sympathy for their numerous widows and fatherless children. A reference to the sad particulars of wrecks furnished by every number of your work will suffice to inform the reader of the probable number which each day adds to this list; and I take the opportunity, Mr. Editor, of calling the attention of those readers, as well as a benevolent and considerate public, to the support of the establishment formed in 1827, under the designation of the MERCHANT SEAMAN'S ORPHAN ASYLUM.

This establishment contains forty-four boys and twenty-six girls, the fatherless children of masters, mates, and seamen; and it clothes, and boards, and gives them such instruction as to enable them, by good conduct, and by diligent industry, to pass respectably through life; and even, if they have talent, to rise to superior situations as they advance in age. It was commenced as an appendage to the Port of London Society, but as it became known to merchant ship owners, to captains of merchant vessels, to underwriters, and other persons, it was considered worthy of being made a separate institution, and, in 1833, was established under an increased board of management as "*a Society*," with claims to a high station among the noble charities of this christian country.

The children are admitted on election by governors, having votes according to the number of children to be admitted. The elections take place in April and October of each year. A subscription of one guinea per annum constitutes a governor; and one payment of ten guineas constitutes a governor for life. On the list of candidates at the last election there were above a hundred boys and girls, but of these only very few could be admitted, owing to a want of funds.

The following are the rules and regulations of this important asylum:—

Its objects are the destitute fatherless children of seamen in the merchant service, who must be between the ages of seven and ten years, and will be continued until the age of thirteen or fourteen years, according to peculiar circumstances.

They must not be diseased nor infirm, and not more than two from one family at one time.

Only one of a family can be a candidate at any *one* election.

Certificates will be required of marriage, and of the incompetency of the mother (if living) to support the child proposed as a candidate.

Friends must engage to receive the child when his or her term shall be completed, and upon the requisition of the managers.

On good conduct, and a satisfactory progress in learning, the child will be furnished by the managers with a suitable certificate of good behaviour.

The managers have power, if the funds suffice, to assist the establishment of a child on quitting the asylum.

The children may be admitted, in numbers limited only by the means at the disposal of the managers, by half-yearly elections, by governors, in April and October of each year.

Candidates for election must be recommended by a governor, and approved by the board of management, who publish a list of candidates at each election.

Governors are entitled to vote immediately at any election.

Governors may concentrate or divide their votes either to one or to more of the candidates on the list.

Subscribers of ten guineas at one time, or of one guinea *annually*, are governors entitled to vote.

Masters of ships collecting among their crews become governors according to the sums collected.

Governors may vote by proxy.

A child may be placed on the institution, with the approbation of the managers, on payment of one hundred guineas.

This Asylum has to lament the loss of its first president and warm friend, the late venerable Admiral Lord Gambier, whose memory will be ever dear to the many children who have known his benevolence. The vacancy has been supplied by the late

President's friend, Lord Mountsandford, and its Vice-Presidents are—

The Right Hon. the Earl of Clarendon,
The Right Hon. Lord Viscount Mandeville, R.N. M.P.
Lieut.-General Neville, R.A.
Admiral Robert Murray,
Admiral Samuel Brooking,
Admiral Fellowes,
Admiral Austen,
Admiral Sir Charles Elkins, K.C.B.
Right Hon. the Earl of Lonsdale,
Admiral Sir Davidge Gould, K.C.B.
Hon. Captain F. Noel, R.N.
Sir Peter Laurie, Ald.
Hon. J. J. Strutt,
Anthony Brown, Esq. Ald.
Lord Henley.

R. H. Martin, Esq. Treasurer.

The following are the present Board of Management:—

N. Gould, Esq., Chairman.
— Bridgeman, Esq. ———
John Chapman, Esq. Leadenhall-st.
W. Ashcroft, Esq. Ratcliffe,
G. Gull, Esq. 68, Old Broad-street,
H. Nelson, Esq. Lloyd's,
John Francis, Esq. Clapton-square, Hackney,
Capt. Barrett, Bedford-square, Commercial Road,
J. G. Hammock, Esq. White Horse, Mile-end Road,
J. W. Buckle, Esq. Markham,
G. J. Jackson, Esq Water-lane,
H. V. Wilson, Esq. Pall Mall,
John Green, Esq. Blackwall Yard,
Capt. Martin, East India Chambers,
William Lyall, Esq. Billiter-square,
Capt. Allen, R.N. Camberwell,
Capt. Dougall, R N. Islington,
Capt. J. Thompson, Old Broad-st.
J. Williams, Esq. 11, Clement's-lane,
J. Lachlan, Esq. jun. Lloyd's,
G. L. Clarke, Esq. Honorary Sec.

It is still an object of earnest solicitude with the board of managers to provide a more eligible situation for the asylum.

The three houses in which they now are were taken in the commencement of the institution, but the increased number of children require additional room for health and exercise.

The expenses of the establishment amount annually to nearly £1500, and the income is not such as can enable the managers to act as they are very desirous of acting by the institution, in respect to economy in the expenditure, which is carried, nevertheless, now to the greatest extent in their power. The asylum needs, and hopes to have, a more powerful support; for, of the forty-three children approved candidates on the list for the election in April, the managers could not admit more than *six!*

The Boys are at No. 3 and 4, Clark's Terrace, } Cannon-st. Road.
The Girls ....11, St. George's Place, }

The Treasurer is R. H. Marten, Esq., No. 9, Finch-lane; the Honorary Secretary, G. S. Clarke, Esq., 5, Berkely-street, Piccadilly.

Many are the bereaved orphans consigned to poverty and destitution by every wind that blows, and the terrific gales that are now* raging are, doubtless, doing their part! Surely, in such a country as ours, washed on every side by the ocean; over which her naval heroes ride triumphant; over which, and wherever it flows, her commerce conveys to foreign lands, or brings home for our enjoyments, the comforts and blessings for which we should all feel grateful. Surely, her opulent merchants and traders of every degree should feel for the fatherless children of the seamen in their service. At present, part of the very earnings of the merchant-sailor are by law devoted to the solace of the worn-out seamen of the *Royal Navy*. The British Merchant Seamen's Orphan Asylum should not be in want of funds. While the officers of the Royal Navy have shewn themselves ready to assist it, both by their patronage and by their property, let not the commercial part of the community, let not the seamen themselves, when they possess the means of assisting their less favoured brethren, deny that little assistance: let masters of ships invite their crews, on paying them off at the end of a voyage, to contribute a mite to the fatherless children of their former brother sailors, who have, perhaps, perished in some of the very perils which they themselves have, by God's good providence, been permitted to survive.

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* Written during the gales in the early part of September.

Mr. Editor, this is a national cause, and one that should be fondly cherished in the breasts of all our countrymen, and I trust that British philanthropists of every rank and employment will feel this appeal to them, that by their well-known benevolence they will enable the Merchant Seaman's Orphan Asylum to take that station among our national institutions to which its valuable purpose so justly entitles it.

The concluding paragraphs of the last report of the managers, will, I trust, be thought worthy of serious consideration.

"The Board of Managers trust they will not be charged with unduly pressing the interests of the institution, when they state that its claims for support are not surpassed by those of any kindred institution. In addition to deep sympathy excited in every benevolent mind on behalf of orphans, those of merchant-seamen must be allowed specially to claim support from the British nation. It is to this class of men, more than to any other, that our country is indebted for the extent of its commerce, and the consequent wealth and comfort brought to our shores, and the importance and influence we possess in the view of foreign nations.

"Sympathy, therefore, for the bereaved widow struggling with the wants of a numerous family; gratitude for self-denying and laborious effort, occasioning in many instances the bold and enterprising sailor an early watery grave; benevolence, which feels delight proportioned to the amount of misery it can lessen, and the depth of distress it can relieve; attachment to our beloved country, whose philanthropic character we are proud to exhibit to an admiring world; and, above all, the influence of our holy religion, which will not allow us "to shut up our bowels of compassion from them that are in need;" all join to assure the *sailor's orphan*, that *his* tears shall be wiped away, and *his* path directed and cheered through life.

I am, Mr. Editor, yours respectfully,
NAUTICUS.

We gladly make room for the foregoing in the pages of the Nautical Magazine, for in so doing we are acquitting ourselves of a pleasing duty, and one that we consider belongs peculiarly to ourselves. The able manner in which our correspondent has advocated the cause of those helpless orphans, whose condition it is impossible to contemplate without emotion, leaves us little to say more, than that such a part carries always its own honourable and gratifying reward. But we may perhaps be allowed to call the attention of our merchant captains, and their crews, to his remarks relating to them, and to point out to their notice the wants of these little ones, whose constant theme is,

> "Yet I was once a mother's pride,
> And my brave father's hope and joy;"

and if they be fathers, they will commiserate their unhappy lot, and consider how soon it may become that of their own; and if they be not, then, how much more will it be in their power to alleviate the irreparable misfortune which has overtaken the children of a brother tar!

VII.—LOSS OF THE SHIP FLORA, *Sheriff, Commander, on the Barrier Reefs, in May*, 1832.

> "Away she went, a gallant sail,
> With streamer curling high;
> They little thought what woe and wail
> Might mark her destiny!"

THE southern extremity of the Barrier Reef commences off Sandy Cape, on the eastern coast of Australia, (or the coast of New South Wales, as it was named by Cook,) and extends to the northward as far as the northern extremity of that continent. It appears as if intended by nature to answer the purpose of a barrier to the coast from the violence of the Pacific ocean, affording here and there convenient openings by which ships may pass through it. This they commonly do in their voyages from Van Diemen's Land or Sydney, towards India, between the months of March and July; but it is a dangerous method, and one that is much deprecated by Captain King, whose experience is entitled to every attention.* It has been usual for transports, with troops proceeding from Sydney to India, to pass through the Barrier Reef. In July, 1832, the John, the Burrel, the Southworth, and the Agnes, sailed from Sydney with the 39th regiment on board. They all separated, and, had they struck on any of the numerous detached reefs outside of the barrier, they would inevitably have found a similar fate to the Flora.

On the 9th of April, 1832, the Flora sailed from Port Jackson for Java, taking the outer passage. On the 24th, Kenn's Reef was seen, and on the 30th, in lat. 12° 8′ S. long. 145° 17′ E., the wind was fresh from east-south-east. On this day, having run fifty miles on a west $\frac{3}{4}$ south course, the ship was hove to the wind. The day was fine, but there was something in the appearance of the clouds, as they rose above the distant horizon, that "bore no aspect of friendship." It has been said of the sea, by a celebrated author, well known for his fine description of scenery in the Western Isles of Scotland, that nothing can be more melancholy than the voices of the sea-birds; the cold, chilling, scream of the sea-gull; the lonely whistle of the curlew; and the feeble, complaining notes of the sand-lark and the plover. There is something perhaps in association: we combine these sounds with the driving clouds, the darkening sea, and the gale. It is, in truth, a "melancholy main;" surging for ever and ever against the bows, or hissing and gurgling in doleful tones past the quarter. Even the sun shines not at sea as it does on land. Faint and cold, it never warms; and the wavering, unsteady, pale shadows of the ropes on the deck seem to speak its impotence. How unlike the chequered and dancing shade of the grove, as it tells of the noonday heat? The sound of the gale, as it sweeps the ancient forest, is majestic; the pine-wood in the storm is the poet's walk. Far other is the whistling of the tempest in the rigging, the spiteful and angry tones which chill and numb the heart. But it is when night begins to settle in, that the sea is indeed sad; when all the horizon glooms around, and the white foam appears at intervals through the shadowy uncertainty of things; when, instead of the quiet home to which we have looked for shelter and repose, we are wanderers of the wild wave, exposed to the night and the storm, without refuge or hope, and where, for the silence of that hour of peace, still we are doomed to hear the same, never-ending, weary sounds. It is then that the life, like the voices of the gull and the cormorant, seems melancholy indeed; condemned, as they are, to pursue their cold, wet occupations on the boisterous wave, homeless, shelterless, and solitary.

At 7 A.M. on the 1st of May, breakers were seen bearing northwest, and ten minutes afterwards other breakers bearing southwest. A south-west course was then steered, as it was believed that the ship was in a proper situation to pass between this detached reef and a reef in 11° 54′ S.

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* See Captain King's letter in Nautical Magazine, No. 18.

The wind was from east-by-south to south-east, the weather squally, with rain. At 7·30, the breakers to the south-west appeared to extend farther to the southward; on which the course was altered to north, as it was supposed they were the breakers to the south-east of Nimrod's passage. Shortly afterwards, other breakers were seen directly ahead, and on the starboard bow. The ship was hauled up to north-east half north. The weather being squally, with a heavy sea, the topgallant masts were carried away. At 8·30, the ship was tacked, as she was found to be completely embayed, there being no passage through the line of breakers to leeward.

The Flora continued working to windward under a heavy press of sail; a strong current, with a tremendous sea, setting down upon the reefs. Sometimes she plunged so deeply, that the masts were expected to go over the side. At 5·50 P.M., just as the sun was setting, the north-east extreme of the breakers was discovered. Not a moment was to be lost; the helm went down, but the ship missed stays; there was no room to wear, and the gay Flora, which had braved so many gales, fell into the breakers, and in an instant struck on the reef.

Two heavy breakers threw her on her beam-ends, smashed both quarter-boats, tore the long boat from her lashings and chocks, and dashed her against the lee bulwark. Twice the ship reeled over to windward, and exposed her deck to the tremendous surf, which threatened to overwhelm her. The whole fury of the surf now fell on her, and it was expected that she would roll off the reef into deep water, in which case instant death would have been the lot of all on board. The force of the sea, however, righted her, and again threw her over on her beam-ends, each succeeding wave rolling over her, and carrying every thing before it. Night, with all the horrors of shipwreck, and the prospect of a speedy termination to their sufferings, closed in upon the unhappy crew in this situation; to use the words of a talented authoress,

> "Night and the hurricane came mingled on,
> Deepening each other's gloom;"

and soon all that was visible through that gloom was the snow-like ridges of the awful surf around them.

There were thirty-seven persons on board the ill-fated Flora, with only one boat now to depend on, and this one broken by the fury of the sea. The night was thus passed, the wind blowing in tremendous squalls, with rain, and the sea breaking incessantly over the vessel, until about 3·00 A.M. of the 2d May. From this time until daylight the water appeared to have fallen, and the ship lay steadier on the reef. With the approaching day, her melancholy situation became more apparent. But daylight was welcome. The morning rose, and with it the hope that morning ever brings, even on the solitary sea. How different had been their situation on the preceding morning! That gallant ship, the pride of all on board, was now the sport of the storm; the whole of the deck planks were forced up a-midships, the main-mast was unstepped, and depending upon the starboard rigging and partners of the deck.

She lay on the reef, full of water; the sea rising fast, with the tide warning the crew to make every possible exertion, while they yet had time, to save their lives; for it was evident, that at high-water the ship would go to pieces, or be covered with the sea.

With the utmost difficulty the long boat was made water-tight, and got over the side without further injury; at ten minutes before eight, on the 2d of May, the crew, consisting chiefly of Lascars, embarked in her, having eighty pounds of biscuit, two hams, two cannisters of preserved soup, three gallons of brandy, and four gallons of water, leaving the Flora a complete wreck on the reef. The boat succeeded in crossing the reef, in a depth varying from four to eight feet water, the distance being two miles, in a westerly direction. A west-south-west course was then steered, for Sir Charles Hardy's group, and several other reefs were passed over in the way, and at 5·30 P.M. the wearied crew landed on one of the islands.

Here the boat was partially repaired, and the exhausted spirits of the sufferers were in some degree renovated by rest, and the shell-fish and roots which the island afforded.

On the 5th, they again set sail on their fragile vessel for Torres Straits, and on the 8th arrived at Booby Island. Here a supply of water was found, and their sinking frames were again revived by a relief from the confinement of the boat, and the supplies which they obtained. An interval of rest strengthened them sufficiently to set out once more on their dangerous voyage, and on the 21st they arrived at Delhi, on the Island of Timor. The condition in which they were it is easier to imagine than describe. Want of food, being constantly wet with rain and salt-water, and crowded closely together in a boat, where, to move themselves, was all they could do, had reduced them to mere skeletons. Timely assistance, however, restored them, and they proceeded afterwards to Coepang, from whence they finally embarked on board the ship Norfolk for Calcutta.

VIII.—SOUNDINGS IN THE NORTH ATLANTIC.

To the Editor of the Nautical Magazine.

SIR—I was much gratified by observing a notice in your valuable work,* stating, that Lieutenant A. Santhill, in 42° 37′ N. and in 41° 45′ W., on observing the water discoloured, had tried for, and found soundings on rocky ground, with a depth of 100 fathoms: as, also, by the opinion expressed by the Lieutenant, that soundings might be found from the meridian of 20° W. to the banks of Newfoundland, because such opinion agrees with that I had formed from careful observation in June, 1828, and which I afterwards made public, under the head of, "Supposed series of submarine banks from Newfoundland to the English Channel."†

During our run across this part of the Atlantic, the changes of colour from the dark-blue of the deep ocean to shades of green, indicative of soundings, were so remarkable, that I was induced to reflect seriously on the probability that we were passing over, alternately, submarine mountain and valley, the general direction of which was north and south. This idea became more and more impressed on my mind, as, from close and unwearied observation, I at last convinced myself, that the effect was not produced by molusca, &c., or by the alternations of the weather; in fact, I was fully satisfied, that, whatever may have been the cause, the effect was not subject to alteration, as the following instance will serve to explain:—On three consecutive days the water continued of a green-blue tint, very different from the general colour of the deep ocean. On the first day, we had a gale, a heavy sea, and sunshine, until the afternoon, when it became cloudy, with a steam-like vapour resting on the surface of the water; second day, no sun, very cloudy, but horizon clear; third day, cloudy until noon, when the sun shone forth bright; in the evening, hazy. The colour of the water during the whole time remaining unchanged.

I have therefore great hopes, if navigators would persevere in trying for soundings between England and Newfoundland, that detached submarine banks might be discovered, which, their positions being accurately determined, would become, as it were, so many beacons in the ocean, giving the longitude to those vessels navigated solely by account. The voyage to and from North America in this route would be greatly facilitated, and these indicators would prove as convenient to the mariner as the milestone is to the traveller on the highway.

The subject being one of much interest, I may be excused for entering a little more in detail, in order to shew the probability of the opinion being correct.

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* Nautical Magazine, No. 8, for October, 1832.

† United Service Journal, part i. 1830, p. 237.

Philosophy informs us, that the colours of natural bodies arise from a quality, in virtue of which they reflect one component part of the solar ray more copiously than the others, and therefore affect the sight with the colour so reflected. It seems obvious, therefore, that blue is the general reflected colour of the ocean; and, from its density near the surface being every where the same, it probably receives but one permanent colour from above. Whatever different colour is found in particular spaces of its surface, it may not perhaps be erroneous to assume, arises from some cause below; that is to say, from the nature of the bottom acting in conjunction with the light above. It may be remarked, however, that, although green-coloured water betokens soundings, yet the bottom is sometimes found where the water is of a blue colour: this probably occurs over rocky ground; it is observable at the Bermudas, where the water is extremely pellucid. It is well known, that the less vapoury the atmosphere is, the darker is the colour of the sky: on the contrary, the colour of the ocean is darker when there are most clouds and other vapours in the air.

That various tints are often seen, particularly at sunrise and sunset, on portions of the ocean's surface, is admitted; but, if a person looks on the opposite side of the reflections which causes these tints, he will find the water immediately surrounding the vessel precisely of the same uniform colour, whether of a blue or a green shade, as had been observed before the tints became visible.

With respect to the probability of the change from one colour to another being occasioned by molusca, from the blending of their prevailing tint with the blue of the ocean, I was, from careful examination, satisfied it could not proceed from that cause. To those seamen who have had frequent opportunities of observing the particular tints of certain portions of the ocean, especially within the tropics, by molusca and crustacea, the distinction would at once be striking on observing them, and the spaces of green-coloured water on which we are now treating: of the former, on the voyage in which I made the observations, I ascertained the fact, by drawing up a bucket of water in instances where the fluid appeared of a brown and of a greenish hue, and found, according to expectation, that it contained thousands of minute animalculæ of those particular colours. During the passage across the Atlantic, I tried this often, and in every instance the water drawn up was as clear as crystal. Although in countless thousands, the medusæ did not cover the surface so closely as to give a tinge to the water like the molusca I had seen in the tropical seas; indeed, we sometimes passed over a long space without seeing one; yet the water preserved its colour. They were evidently more numerous in the green-coloured water than in the blue, but thousands were also seen in the latter.

I beg it to be understood, that, in making this communication, I do not mean to attach any credit to myself, from having originated the idea before Lieut. Sainthill verified it, by obtaining a depth of 100 fathoms to the eastward of the Grand Bank, because it is extremely probable that many navigators may have formed a similar opinion long before my time, and, for aught I know, may have made such known publicly: undoubtedly, however, Lieut S. is entitled to the praise of having determined, by practical proof, the probability of such an opinion being correct. My only ambition in this matter is, if possible, to be useful; it is enough, therefore, for me, Mr. Editor, to second you in directing the mariner's attention to a circumstance, which, if verified to the extent conceived, (or even less,) would become of the greatest benefit to us all.

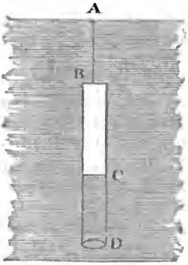
AN ADVOCATE for the FREQUENT USE of the
DEEP-SEA LEAD.

IX.—PRESSURE OF THE OCEAN.

IN those accustomed to the Greenland whale fishery, the immense pressure of the ocean cannot but have excited much astonishment and curiosity. In the common method of capturing whales, it is customary to strike them, at first, by a harpoon, an instrument well known to the sailors, with a stock or handle of fir, ash, or hickery, with a line of a very considerable length attached to it; and as soon as struck, the whale generally descends, nearly as quick as a bird, to a very great depth, taking the harpoon along with him, buried to the depth of 12 or 18 inches in his body, while the other end of the line is particularly coiled in the boat, and veered out by the harpooner with much caution and dexterity. It sometimes happens that the whole of the first boat's line, though no less than 1080 fathoms long, will be taken under water in a very few minutes; and if another boat be not near for the harpooner to fasten the end of another line to the end of his own, the whale must be suffered either to go away with the line, or else with both boat and line; the latter method can only be taken when a convenient piece of ice is at hand for the preservation of the boat's crew. And it has too frequently happened, that the line has got entangled in the boat, in consequence of which the whale has taken it completely under water along with her, and given the whole, or most of the crew, a watery grave. During my career I have twice experienced this misfortune, having had the boat taken twice from under my feet, and at another time a whale cut my boat completely in two with his tail. During the absence of the whale under water, many boats are collected around, waiting his return to the surface, when he is immediately struck by another, or perhaps two harpoons, and then descends again the same as before, but probably not a tenth part so far as at first, ere he is obliged to return again to the surface to breathe. He is then struck with lances, instruments with a blade and shank from four to six feet long, which are thrust to the same distance into his body, and which makes the blood spout out in torrents. One or two good lances, directed to proper parts of the body, speedily put an end to his existence, when he immediately turns on his back, and lies flat on the surface of the water.

It had long occurred to me, that when the harpoons were taken out of the new-killed whales, they were much heavier than usual; and that they were obliged to be hung up in the galley (the place for cooking) before a large fire for several days, before they could, at any rate, be made use of again; nor were they, after this long exposure to heat, near so light and handy as at first. This had frequently attracted my notice, without any further investigation of its cause, until the year 1820, on board the ship Harmony, of Whitby, when, after capturing a whale in the usual manner, I observed a harpoon-stock, which was broken close to the socket, and which I believe was of fir, drop into the water, and immediately sunk like a stone. This excited my curiosity afresh, and I determined to examine more minutely the several harpoon-stocks, which had been taken down by whales to similar depths; and on cutting them in two with a saw, I found that of whatever kind of wood they were made, they were as completely soaked in every pore, to the very heart, as if they had lain at the bottom of the sea since the creation of all things! and even some of them were cracked and fissured in different places. Beside, their surfaces were invariably covered with small air bubbles like froth for a considerable time after they were risen above the surface of the sea.

I also corked and sealed an empty quart bottle, and sent it down with the marine diver, to the depth of 100 fathoms; and when drawn up, the cork was found in the inside of the bottle. I then made another cork, rather too large for the bottle, knocked it in with a mallet as far as I could, for fear of breaking the bottle, which, being sent down to the same depth of 100 fathoms, was found to be pushed in: and it is very probable that had the cork been sufficient to resist the pressure, the bottle would have been crushed to atoms. However surprising this may appear, it must necessarily vanish, when we consider the immense pressure which must of necessity take place on every part of the surface of the body immersed under such a vast column of water; such a pressure as no vacuities, however strongly protected, can resist. For the pressure on the bottle, consisting of only 85.215 square inches of surface, at the depth of 100 fathoms, is found by calculation to be be no less than 10 tons, 9 cwt. 1 qr. 13 lb., and that on the cork 15 stone, 6 lb. 2 oz. And at the depth of 900 fathoms, or 5400 feet, the pressure on every square foot of surface will be $(5400+34)$ 1000 oz.$=5434000$ oz.$=151$ tons, 12 cwt. 1 qr. 13 lb.!!



Let BCD represent a cylinder, open at the lower end, and immersed in water until the external water exceeds the internal by the height AC, and the air in the cylinder be reduced to the space BC; then that air is pressed both by a column of water, whose height is AC, and also by the weight of the atmosphere, which presses on the upper surface of the water. The space BC is consequently to the space of BD, as the weight of the atmosphere is to both the weight of the atmosphere and the column of water AC. Put the length of the cylinder $=l$, BC$=x$; then since the atmosphere is sufficient to balance a column of water 34 feet in height, when at a mean temperature, we get $x : l : : 34 : 34+AC$, which gives $x=\frac{34\,l}{34+AC}$. But the diameter of the cylinder may be any quantity; and may therefore be represented by a *pore* in ash or fir wood as well as any wider opening. Consequently, at the depth of 100 fathoms, no pore can remain clear of water above $\frac{34}{34+600}=.0536$ of its length. And at the depth of 5984 feet, no pore can remain clear of water above $\frac{34}{34+5981}=\frac{1}{177}$ part of its length, even if all the air still remains in the wood. It has been very naturally suspected by Captain Scoresby, F.R.S. et M.W.S., &c. at page 368, vol. I. *Philosophical Journal*, that the "greatest permanent impregnation by pressure of such open-grained wood as ash, elm, fir, &c. is produced at the depth of 300 or 400 fathoms." But notwithstanding the accuracy with which Captain Scoresby's experiments have been made, this is not strictly the case, as of which he seems afterwards to have been nearly aware: and that it did not appear more evident to him, appears to have been on account of the smallness of the cubes made use of in his experiments, which render the difference of weight gained so exceedingly small, that it is quite unsusceptible of any practical measurement.

In taking the cube of 4 solid inches, sent down by Capt. Scoresby to the depth of 6348 and 4836 feet, we have $\left(\frac{34}{34+6348}\right)^3 \times 4 =$ .0000005927 cubic inches, the quantity of wood left dry at the depth of 6348 feet, and $\left(\frac{34}{34+4836}\right)^3 \times 4 = .0000013676$ cubic inches; their difference is .0000007749 cubic inches, a quantity far too small for any mensuration by *weight.* But as the expression $\left(\frac{34}{34+AC}\right)^3 \times l^3 - \left(\frac{34}{34+A2}\right)^3 \times l^3$, when the depths are given, varies as the 3rd power of the length of the pore, or side of the cube, it is evident that it will become more susceptible to mensuration as the side of the cube is increased. Since, at the depth of 900 fathoms, the pressure upon every square foot of surface will be 151 tons and upwards, what an amazing pressure must of consequence exist on the surface of a whale, the superficial content of whose body will be considerably above 1000 square feet!

Here 151 tons × 1000=151000 tons!!!

Since this pressure, however, is exerted equally on all sides, I suppose it will be no inconvenience at all to the animal, any further than all the air in its body will be compressed into no space, in comparison; and every pore will be completely full either of sea water or the juices of its own body.

THOS. BEVERLEY.

X.—THE IRON STEAM-BOAT ALBURKHA.

THE sketch accompanying our present number is a representation of the wrought-iron steam-boat Alburkha, some account of which was given in a former page of our work.* This vessel is now in the river Niger, with the Quorra steam-boat, and seems to have been the favourite of the two vessels, since they departed on their interesting expedition. The advantages of iron vessels in warm climates are ably pointed out in a short extract we gave in our last number from Chamber's Journal; and these advantages seem to be in no wise exaggerated in the instance of the Alburkha, according to the reports received from those embarked in her. This vessel was built by Mr. Laird of Liverpool, for the purpose of navigating the shoal-water of the river, and we understand that he has since constructed another for the interior navigation of Ireland. We have little doubt that these vessels, from their vast superiority over those of wood, and their durable quality, will speedily be numerously employed. We must defer our remarks on them for another number.

No. 7. p 306.

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LITERARY AND SCIENTIFIC NOTICES.

BOOKS.

Narrative of a Voyage to the Ethiopic and South Atlantic Ocean, Indian Ocean, Chinese Sea, North and South Pacific Ocean, in the years 1829, 1830, 1831. By Abby Jane Morrell. New-York. Harper. 1833.

We have received this at too late a period to enable us to say more of it, than that it appears to be an interesting little production of the wife of Captain Morrell, whose work was noticed in our June number. This lady, it appears, accompanied her husband on his perilous adventures—what few ladies will venture to do—and has followed his example, in publishing the result of her observations. We extract the following little account of amber, written when she was at New Guinea :—

"While here, my husband purchased several pieces of *ambergris* of the natives. I examined this wonderful substance very attentively. Its colour is a darkish yellow, resembling very closely a mass of bees'-wax. It had insects and beaks of birds in it, and burned very clear, as much so as bees'-wax. When rubbed, it emits a perfume generally much admired. It was taken from the water, on which it was floating, about one-third of it above the surface. Numerous accounts have been given of its nature and origin. It has been said that it grows in the intestines of the spermaceti whale. It is true, that it is often found in the whale, but generally in those that are poor and unhealthy. The whalers, I find, have a general impression that it originates there from the feeding of the whale on certain fish, called squids. The Orientals, however, had no such idea of its origin ; they considered it as a sea mushroom, which, growing on the bottom of the sea, was by time or accident rooted up, and, coming to the surface, grew harder by partial exposure to the sun. Others say that it grows on the rocks, and is washed off in storms and driven near the islands, where it is picked up by the natives. Some suppose it is wax, or a honey-comb, which, by dropping into the sea, undergoes a chemical change ; while some contend that it is a bituminous matter, that comes from the bottom of the sea. There are not a few who think that it is the excrement of certain fish ; but the poets of the East say, that it is a gum from the tears of certain consecrated sea-birds.

"Around thee shall glisten the loveliest *amber*
That ever the sorrowing sea-bird hath wept,
And many a shell in whose hollow-wreathed chamber
We Peris of ocean by moonlight have slept."

"Whatever may be its origin or creation, it certainly has for many centuries been held in high estimation as a perfume and for ornaments, and its use has generally been confined to the rich and powerful. Large pieces of it have lately been found, and when we consider the purposes for which it has been used—particularly as a perfume—the price of it is astonishing. My husband, who has been much in these seas, and often made it a matter of traffic, is of opinion that the natives of these islands have a correct idea of the substance; viz. that it is made by an insect at the bottom of the sea, and accumulates for years; and that sea-birds devour it when within their reach, which accounts for their bills being found in it. The birds, being attracted by its glutinous qualities, strike their beaks too deep to extricate themselves, and their bodies decay, while the bony parts of their beaks remain. The sperm-whale is a ravenous animal, and he may root it up and swallow it; and this, perhaps, is one mode by which the God of nature intended that the leviathan of the ocean should be destroyed. That it is formed in the whale, seems unnatural in many respects; the places, too, where it is found in the most abundance, do not abound in sperm-whales, and I have never read that it was found in any other kinds of whales."

THE RAILWAY COMPANION, describing an Excursion along the Liverpool Line. By a Tourist. London. Wilson.

A useful and interesting little brochure for those who would gain information, not only concerning the Liverpool and Manchester Railway, but also of the history of railroads in general. It is illustrated by several lithographic views, and is an indispensable companion to the northern tourist.

CHARTS.

THE GULF OF SPEZIA, by Captain W. H. Smyth, R. N., K. S. F. Size, Half-Double Elephant. Admiralty.

This is a plan including the whole of the Gulf of Spezia; and contains, besides, a smaller plan of the town and road of Viareggio in the Duchy of Lucea. It is on a good bold scale, and is a valuable chart for ships navigating the Gulf.

THE HARBOUR OF VILLA FRANCA, by Captain W. H. Smyth, R.N., K.S.F.. Size, Half-Double Elephant. Admiralty.

Contains much of the detail of the neighbourhood of Villa Franca from the city of Nice as far as Eza, on a scale of nearly six inches to the mile. It might be improved by a few additional soundings.

PORT HONDURAS., by Commander R. Owen. Quarto.

Sufficient to direct a ship to the anchorage.

ROWLAND'S DOUBLE SEXTANT.—A short time ago, we alluded to this invention of Mr. Rowland, and spoke of its merits in somewhat favourable terms. On the first glance of the principle on which it is constructed, we were satisfied of the advantages it possessed over all reflecting instruments used by seamen, and hesitated not to record our opinion of it. Mr. Rowland having completed a model of his invention, it was forwarded, by direction of the Lords Commissioners of the Admiralty, to Captain Hewett, of H.M.S. Fairy, for his report. The report of Captain Hewett was favourable, and Mr. Rowland has since been rewarded by their Lordships for his ingenuity. We have just seen an unfinished instrument constructed on the same principle, and fully anticipate its becoming a favourite with the expert navigator.

PORT WILLIAM AT REDCAR. We have received the prospectus for the formation of this harbour, to which we have alluded in several former numbers. If further evidence were required of how much such a harbour is wanted, in the exact position in which it is intended to construct Port William, the late gales have furnished it too fully. We find by the prospectus, that a meeting, at which the Hon. Admiral Fleeming presided, was held in Manchester Buildings, on the first of June, when, besides others, a letter from Admiral Nugent, expressing his high opinion of the proposed harbour, was read, a committee of noblemen and gentlemen was also formed, and several resolutions relating to the formation of a company, to carry the plan into execution, were agreed on. We find also, that a second meeting has taken place at Stockton. Annexed to the report we find some extracts from Lloyd's list of wrecks that have occurred at various periods on the coast near Redcar. We must not allow ourselves to particularize any from this lengthened list, but strongly recommend it to the attention of our readers who are interested in this important measure. Suffice it to say, that had Port William been in existence, there can be no doubt that the greater part of them would have been saved.

It is with feelings of pride and satisfaction that we also find, by the copy of a letter which we have also received, that His Majesty has graciously condescended to sanction the proposed undertaking by granting the petition of the sixth resolution of the meeting to the following effect:—

"That in consideration of the magnitude and importance of the harbour which it is proposed shall be formed at Redcar, permission be asked of His Majesty to name it PORT WILLIAM, in commemoration of the reign of our most gracious Sovereign."

His Majesty's most gracious reply was conveyed in the following letter from General Sir Herbert Taylor:—

SIR, WINDSOR CASTLE, August 26th, 1833.

I beg to acknowledge the receipt of your letter of the 24th Inst. which I have had the honour to submit to the *King* with the accompanying volume, and have received His Majesty's commands to communicate to you his acquiescence in the wish of the Committee of Management, that the Harbour proposed to be formed at Redcar, shall receive the name of PORT WILLIAM. I have the honour to be, Sir, your obedient humble Servant,

H. HEDGER, ESQ. H. TAYLOR.

We have little doubt, therefore, considering the high approbation which this intended work has received, that we shall soon be enabled to congratulate the country at large on its execution; our own efforts in its behalf will always afford us a pleasing retrospect. During the late gales, several instances were afforded, where vessels, with their unhappy crews, would have been saved from total destruction, had Port William been constructed. Many, alas, are known to have foundered at sea, and many others, there is reason to believe, perished unknown. Our table of wrecks furnishes the following names of vessels that might have been saved, could they have borne up before the gale, for refuge in Port William. The Alfred, of Aberdeen, sailed from Shields on the 30th of August, and in making for Whitby on the following evening, sunk, when all on board perished. The Dorothy foundered off Filey Bay, on the 31st of August, the crew drowned. The Mary and Isabella went on shore in Filey Bay on the 31st, the crew drowned. The Juno from Shields, driven on shore in Filey Bay, the crew happily saved. The Trafalgar, of Newcastle, and the Trimmer, of Whitby, driven on shore near that place. The Ann and Susannah, driven on shore in Robin Hood's Bay. The Lark, from Sunderland, driven on Filey Sand; besides the Eagle, of Stockton, and the Lively's Increase. These are glaring instances of the want of Port, William: and, unhappily, the number is too often repeated. Since, then, such abundant proof is afforded of the want of a harbour like Port William; since the immense advantages it will secure to the country at large, are so generally acknowledged; and since it has received the sanction of the highest authority in the realm, we look on the undertaking as already half achieved, and its success as certain.

A PATENT CAPSTAN.—(The invention of a Mr. Brown,) possessing great power, and simple in construction, has been brought to us at a late period for our present number, but shall be more particularly described in our next. At present we can only say, that it appears to have several advantages over the common capstan used with bars. Its power is obtained by the application of the winch, and is clearly three to one. The convenience of it will be apparent to those accustomed to the necessary confusion of a number of men working at the common bars, by conceiving that one-third of them may do the same work, in a stationary line across the deck, or fore and aft, as may be thought advisable.

AFRICAN EXPEDITION.—A letter having appeared in the Kelso Chronicle a few weeks ago, which has since been very generally copied into the London and provincial papers, stating, among other reports, "That the medical man who went up the river (Niger) was quite an inexperienced practitioner, and neglected to take up a proper quantity of stores;" and, "that Mr. Macgregor Laird appears to have behaved in a most mutinous manner towards Mr. Lander:"—

We are authorized to state, that the supply of medical stores sent out was much larger than was thought necessary by competent persons; that, of Dr. Thomas Briggs' abilities, the Company had the highest testimonials before engaging him; and, that subsequent events have proved that their confidence in his medical knowledge and general scientific acquirements was well founded.

With regard to Mr. Macgregor Laird's *alleged mutinous* conduct, in none of the letters received by the Company from him or Mr. Lander, since the expedition left England, is there the slightest allusion to a difference of opinion existing, or having existed, between them; and we know that the Company continue to have every confidence in Mr. Laird's zeal and judgment.

DWELLING-HOUSE DISCOVERED IN A BOG IN DONEGAL.—That indefatigable and scientific officer, Captain Mudge, in the course of the survey of the north-west coast of Ireland, which he is conducting under the auspices of the Lords Commissioners of the Admiralty, has lately had an opportunity of investigating a most singular structure which has been found sixteen feet below the surface of a bog near Donegal. It appears to have been a small dwelling-house, rudely framed of oak, and, from the antiseptic qualities of bog, is in perfect preservation. A plan, elevation, and a minute description of this highly interesting discovery, have been communicated to the Society of Antiquaries; and the public anticipate, with no ordinary eagerness, the appearance of these documents; for, though this building is on a small scale, composed of homely materials, and placed in a less refined region than Pompeii, yet, like that celebrated city, its disinterment brings us immediately to the manners and customs of the Irish fifteen or twenty centuries ago.

Remains uncovered by the Sea at La Hogue, France.—A singular circumstance happened at La Hogue on Saturday the 7th of March, 1833. The weather being very calm, and the surface of the sea smooth, the tide was observed to ebb to so great a distance as to leave the road-stead entirely dry. Parts of the vessels of the celebrated Tourville,[*] that were burnt and sunk by the English fleet under Admiral Russel, May 29th, 1692, were exposed to view.

The hulls of these ships appeared in a high state of preservation, and, during the interval of the two tides, it was found practicable to recover six pieces of cannon, and several cart-loads of cannon-shot. These, although they had remained under water for upwards of 141 years, were found in good condition. Since this brilliant but unfortunate battle, there is no tradition of the sea having receded so far as in the above-mentioned instance. The mariners of the coast foretel a similar event to occur on Friday the 5th of April. It is to be hoped that the expectation of such a phenomenon being repeated will suggest some more effectual measures to be adopted for the recovery of these remains of wreck than could be employed at the time, from the suddenness and surprise occasioned by so unexpected an event.—*Annales Maritimes.*

We could not find room for the foregoing in our last,—and in the Number V. and VI. of the *Annales*, which has since come to hand, we find that instead of six pieces of cannon, one only was recovered; and 150 shot, of various sizes. Forty or fifty of these were got into an old boat, which was overturned by the sea, and endangered the lives of two of the *salvors*, who were inexperienced in nautical affairs. The boat having sunk on a part of the coast belonging to the Port of St. Vaast, no further trouble was taken about her or her cargo!

NAUTICAL MISCELLANY.

NAVAL INTELLIGENCE.

The Royal Navy in Commission.

⁂ S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

Actæon, 26—Hon. F. W. Grey, 27th August, Bosphorus.

Ætna, S. V. 6—Com. W. G. Skyring, Portsmouth harbour. Refitting.

African, St. V. — Lieutenant J. Harvey, 26th Aug. arr. at Falmouth; left Lisbon 17th, Oporto 20th; 15th Sept. sailed for Lisbon.

Alban, St. V. — Lieutenant A. Kennedy, 26th July arr. at Madeira; 30th sailed for Demerara.

Alfred, 50—Capt. R. Maunsell, 31st July at Malta; arr. 27th from Tenedos; 18th Aug. sailed for Nauplia.

Algerine, 10—Com. Hon. J. F. F. De Roos, 17th June sailed for Bahia and Pernambuco; 25th June arr. at Bahia.

Alligator, 28—Captain G. R. Lambert, 25th February, left Trincomalee for Madras.

Arachne, 18—Com. W. G. Agar, 6th and 28th July, at Barbadoes; 2d Aug. arr. at St. Kitts.

Andromache, 28—Capt. B. Yeoman. Hamoaze, fitting.

Ariadne, 28—Capt. C. Phillips, 28th July at Halifax, arr. 25th; 3d Aug. left for Bermuda.

Asia, 84—Rear-Admiral Sir G. Parker, C.B., Capt. P. Richards, Tagus, 17th and 23d August, and 13th Sept.

Astrea, 8—Capt. W. King, Falmouth, superintendent of Foreign Packets.

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[*] History informs us, that twelve of Tourville's vessels were destroyed in La Hogue Roads, and that many others met with the same fate on the coast of Cherbourg. Not many years since, some curious relics were discovered buried a few feet in the sand; among them were a quantity of cannon-shot, and the scabbard of a sabre: this occurred in the Downs, towards the east of the port, and the articles found were supposed to have belonged to these unfortunate vessels. The old sailors affirm, that, on many occasions, at the reflux of the tides, they have seen other pieces of wreck lying several fathoms under water.

Athol, *Troop Ship*—Mr. A. Karley, 2d Sept. sailed for Cork; 8th Sept. arrived there.

Badger, 10—Com. G. F. Stowe, Simon's Bay. Cut down to a mooring vessel.

Barham, 50—Capt. H. Pigot, 27th July off Tenedos.

Beacon, S. V.—Com. R. Copeland, Archipelago.

Beagle, 10, S. V.—Com. R. Fitz-Roy, South America, surveying.

Belvidera, 42—Capt. Hon. R. S. Dundas, 7th Sept. sailed for Figueira.

Blanche, 46—Capt. A. Farquhar, K. H. C. B. 6th July at Barbadoes from St. Vincent's; 25th July arr. at Barbadoes from Antigua; 3d Aug. sailed from Barbadoes.

Brisk, 3—Lieut. Stevens, 15th June at the Gambia; arr. there 14th.

Britannia, 120—Vice-Admiral Sir P. Malcolm, Capt. P. Rainier, 27th July off Tenedos.

Britomart, 10—Lieutenant H. Quin, 8th June arrived at the Gambia. 14th sailed for Sierra Leone.

Buffalo, *Store Ship*—Mr. F. W. R. Sadler, *Master*, 24th June spoken in 4° S. 29° W; 10th July arr. at Rio.

Caledonia, 120—Captain T. Brown, 1st Sept. at Cork.

Carron, St. V.—Lieut. Com. J. Duffill; Woolwich.

Castor, 36—Capt. Rt. Hon. Lord John Hay, 14th Sept. at Oporto.

Ceylon, 2.—Lieut. H. Schomberg, Malta.

Challenger, 28—Capt. M. Seymour, Portsmouth 28th, undocked, in the basin; 20th Sept. taken out of the basin.

Champion, 18—Com. Hon. A. Duncombe, 10th June sailed for Alexandria.

Charybdis, 3 — Lieut. Com. R. B. Crawford, at Ascension 19th June.

Cockatrice, 6—Lieut. Com. W. L. Rees, Rio Janeiro.

Cockburn, 1—Lt. Com. C. Holbrook, Kingston, Lake Ontario.

Columbia, St. V. 2—Lt. Com. R. Ede, 28th Aug. sailed for Woolwich.

Columbine, 18—Com. O. Love, 18th Aug. at Halifax; sailed 21st for Jamaica.

Columbine, St.V.—Lieut. R. Ede, 10th July Left Falmouth for Mediterranean.

Comet, St. V. — Mr. T. Allen, 17th Aug. sailed for Hamburgh, for the Princess Lieven.

Comus, 18—Com. W. Hamilton, 6th July at Barbadoes from Demerara.

Confiance, St. V. 2—Lieut. Com. J. W. Waugh, Plymouth, fitting.

Conway, 28—Captain H. Eden, 8th Aug. arr. at Madeira; 9th sailed for Rio.

Cordelia, 10—Com. C. Hotham, 20th May sailed for Corfu.

Cruizer—Com. Jas. M'Causland, Sheerness, fitting.

Curaçoa, 26—Capt. D. Dunn, China Seas.

Curlew, 10—Com. H. D. Trotter, 9th May captured a vessel with 290 slaves on board, off Fernando Po.

Dee, St. V. 4—Com. W. E. Stanley, (*b*) 3d Sept. arr. at Portsmouth from Cork after a passage of 39 hours; 12th Sept. sailed in company with the Lightning for Plymouth; 20th Sept. sailed from Plymouth.

Dispatch, 18—Com. G. Daniell, 8th July at Barbadoes from Bermuda; 31st July left Bermuda for Jamaica.

Donegal, 78—Capt. A. Fanshawe, 12th Sept. in the Tagus.

Dromedary—R. Skinner, Bermuda.

Dublin, 50—Capt. Rt. Hon. Lord J. Townsend, 28th March arrived at Callao.

Echo, St. V. 2—Lieut. Com. R. Otway, 20th August sailed for Lisbon; 3d Sept. in the Tagus; 19th Sept. arrived at Plymouth; left Lisbon 12th, with proposals for the intervention of England in the quarrel between Don Miguel and Don Pedro.

Endymion, 50 — Captain Sir S. Roberts, Knt. C.B. 9th Sept. went into the Sound; 20th Sept. sailed in company with the Lightning.

Excellent, 58—Capt. T. Hastings, Portsmouth.

Fair Rosamond, *Schooner*—Lieut. Com. G. Rose, 22d Aug. in the Tagus; 30th Aug. sailed for Sierra Leone.

Fairy, S. V. 10—Com. W. Hewett, surveying in the North Sea.

Favorite, 18—Com. G. R. Mundy, Portsmouth, fitting.

Firebrand—Lt. W. G. Buchanan, 24th Aug. arr. at Spithead; 25th sailed for Holyhead. She is a superbly fitted vessel, and intended as the future yacht for the Lord Lieutenant of Ireland. Her engine is of Maudsley's best make. and her paddles, of Morgan's construction, enter the water perpendicularly, and by means of a crank remain always in that position, creating no backwater, and projecting from the side not more than four feet and a half.

Firefly, 2—Lieutenant J. M'Donnel, 9th July at Jamaica.

Firefly, St. V.—Lieut. T. Baldock, 9th Aug. arr. at Gibraltar, and sailed 11th for Malta; 15th Sept, arrived at Falmouth.

Flamer, St. V. 6—Lieut. R. Bastard, 24th July arr. at Portsmouth, from Falmouth; arrived there 18th. Woolwich.

Fly, 10—Com. P. M'Quhae, 6th July sailed from Jamaica for Bermuda; 19th July at Jamaica.

Forester — Lieut. G. Miall, Plymouth, fitting.

Forte, 44—Capt. W. O. Pell, 9th Aug. into the Sound; 17th sailed for Halifax, with Pyramus in charge.

Gannet, 18 — Com. J. B. Maxwell, 6th July left Jamaica for Halifax; 30th July arrived; 13th Aug. left for Bermuda.

Griffon, 3—Lieut. E. Parlby, 10th July at Gambia River.

Harrier, 18—Com. H. L. S. Vassal, 27th March at Madras.

Hermes, St. V. — Lieut. J. Wright, 27th Aug. arr. at Falmouth; left Lisbon 21st.

Hornet, 6—Lieut. F. R. Coghlan, running between Monte Video and Rio Janeiro.

Hyacinth, 18—Com. F. P. Blackwood, 6th July arr. at Rio; to sail for Cape about 13th; passenger Lieut. G. A. F. Danvers, R.M. to join H.M.S. Imogene; 24th spoken on way to Cape in 27° S. 23° W.—all well.

Imogene, 18—Capt. P. Blackwood, 1st Feb. arrived at Sydney; 13th sailed; 23d Feb. returned to Sydney.

Investigator, 16, S. V.—Mr. G. Thomas Shetland Islands, surveying.

Isis, 50 — Captain J. Polkinghorne, 29th April at Mauritius; 26th June arr. at Cape; 8th July at Cape.

Jackdaw, S. V.—Lieut. E. Barnett, 14th June arr. at Nassau.

Jupiter, *Troop Ship*—Mr. R. Easto, 18th May arr. at Cape; 29th April arr. at Mauritius with 19th Regt.; 30th May sailed for Ceylon to convey troops home.

Kangaroo, 3—Lieut. F. Gilley, 9th July at Jamaica.

Larne, 18—Com. W. S. Smith, 28th June arr. at Halifax; 18th July sailed; 31st July left Bermuda for Jamaica.

Leveret, 10—Lieut. W. F. Lapidge, 28th July arr. at St. Ubes from Lisbon; 14th Aug. arr. at Lisbon; 3d Sept. in the Tagus: 12th Sept. at St. Ubes.

Lightning, St. V.—J. Allen, 12th Sept. arr. at Portsmouth. Sailed immediately for Plymouth with the Lords Commissioners of the Admiralty, escorted by the Vestal, Racer, Rapid, and Dee; arrived 14th.

Madagascar, 46—Capt. E. Lyons, 17th June arrived at Smyrna, with Otho, king of Greece, on board.

Magicienne, 24—Capt. J. H. Plumridge, 12th Feb. arrived at Calcutta.

Magnificent, 4—Lieut. J. Paget, Port Royal.

Magpie, *Cutter*—Lieut. J. Moffat, 18th Sept. arr. at Falmouth from Oporto: sailed 11th.

Malabar, 74—Capt. Hon. J. Percy, 27th July off Tenedos.

Mastiff, 6, S. V.—Lieut. T. Graves, Archipelago.

Melville, 74—Vice-Admiral Sir John Gore, K.C.B., Capt. H. Hart, 27th May arr. at Mauritius from Bombay. To return on the 15th June.

Messenger, St. Transport—Mr. J. King, Portsmouth station—attending on the Duchess of Kent.

Meteor, St. V.—Lieut. Symons, 27th July off Tenedos.

Minx, 3—Lieut. J. Russell, 20th May at Jamaica.

Monkey, —Lieut. ———, 26th May at Jamaica.

Nautilus, 10—Com. Rt. Hon. Lord G. Paulett, 14th Sept. off Oporto.

Nimble, 5—Lieut. C. Bolton, 3d July at Havana.

Nimrod, 20—Com. Geo. Hope, 17th August and 3d Sept. in the Tagus; arr. 15th.

Ocean, 80—Vice-Admiral Sir Richard King, Bart. K.C.B., Capt. S. Chambers, Sheerness.

Onyx, 10—Lieut. A. B. Howe, Plymouth station.

Orestes, 18—Com. W. N. Glascock, 11th Sept. in the Douro.

Pallas, 42—Capt. W. Walpole, 9th and 19th July at Jamaica.

Pearl, 20—Com. R. Gordon, 12th June arr. at Jamaica from Barbadoes; 24th July arr. at Barbadoes from Bermuda.

Pelican, 18—Com. J. Gape, 6th Aug. arr. at Gibraltar.

Pelorus, 18—Com. R. Meredith, 3d June arr. at Mauritius; to sail on 6th June for Ceylon.

Phœnix, St.V.—Com. R. Oliver, Woolwich.

Pickle, 5—Lieut. C. Bagot, Bahamas.

Pike, 12—Lieut. A. Brooking, 9th Sept. arr. at Falmouth from Lisbon.

Pincher, 5—Lieut. J. Hookey, 19th May arr. at Jamaica.

Pluto, St. V.—Lieut. T. R. Sullivan, 19th June at Ascension, refitting.

Prince Regent *Yacht*—Capt. G. Tobin, Deptford.

Pylades, 18—Com. E. Blankley, 11th July at Rio Janeiro; arrived 8th.

Pyramus—26th July Plymouth Sound; 17th Aug. sailed in charge of **Forte**.

Racer, 16—Com. J. Hope. Portsmouth, 26th Aug. went out of basin; 5th Sept. anchored at Spithead; 12th Sept. sailed in company with Lightning for Plymouth; 20th Sept. sailed from Plymouth.

Racehorse, 18—Com. F. V. Cotton, 6th July arr. at Maranham; 13th sailed for Para.

Rainbow, 28—Capt. Sir J. Franklin, Knt. 28th June sailed for Levant; 24th arrived in Basika Bay; 3d July sailed for Samos.

Raleigh, 18—Com. A. M. Hawkins, 12th June sailed; 10th July arr. at Malta from Tripoli; 17th July sailed for Alexandria.

Rapid, 10—Lieut. Com. F. Patten, Portsmouth; went out of basin 25th Aug.; 12th Sept. sailed in company with Lightning for Plymouth; 20th Sept. sailed from Plymouth.

Rattlesnake, 28—Capt. C. Graham, 23d Dec. sailed for Lima and California.

Raven, S. V. 4—Lieut. W. Arlett, 19th Aug. arr. at Spithead.

Revenge, 78—Capt. D. H. Mackay, 1st Sept. at Cork.

Rhadamanthus, St. V.—Com. G. Evans, 9th July at Jamaica.

Ringdove—Com. James Barrow, Plymouth, fitting.

Romney, *Troop Ship*—Mr. R. Brown, 1st Sept. at Cork.

Rover, 18—Com. Sir G. Young, Bart., 12th June sailed for the Levant.

Royal George *Yacht*—Capt. Right Hon. Lord A. Fitzclarence, G.C.H., Portsmouth.

Royal Sovereign *Yacht*—Capt. C. Bullen, C.B., Pembroke.

Royalist, 10—Lieutenant R. N. Williams, Plymouth station.

St. Vincent, 120—Capt. H. F. Senhouse, 27th July off Tenedos.

Salamander, St. V.—Com. W. F. Austin, 7th Sept. arr. at Portsmouth, having conveyed the Salsette from the Humber to Sheerness; 16th Sept. left Portsmouth harbour with the Soho steamer, having on board Her Majesty Donna Maria the Queen of Portugal, to escort her to Lisbon.

Samarang, 28—Capt. C. H. Paget, 23d June arrived at Pernambuco from Bahia; sailed 25th; 30th arr. at Bahia; 19th July at Bahia.

San Josef, 110—Admiral Sir W. Hargood, Capt. G. T. Falcon, Hamoaze.

Sapphire, 28—Capt. Hon. W. Trefusis, 28th July at Halifax; 3d Aug. left for Barbadoes.

Satellite, 18—Com. R. Smart, 27th June touched at Madeira, and sailed immediately.

Savage, 10—Lieut. R. Loney, 3d Sept. at Lisbon.

Scout, 18—Com. W. Hargood, 25th Aug. arr. at Malta from Nauplia.

Scylla, 18—Com. Hon. G. Grey, 7th July arr. at Malta from Tripoli.

Seaflower, 4—Lieut. J. Morgan, 12th Sept. sailed for the westward.

Serpent, 16—Com. J. C. Symonds, 2d Aug. spoken in 48° N. 25° W.; 18th Aug. arr. at Halifax. To sail in a week for Bermuda and Jamaica.

Skipjack, 5—Lieut. W. Shortland, 18th July sailed from Halifax.

Snake, 16—Com. W. Robertson, 4th June arr. at Portsmouth; 15th sailed for South America. Passengers to join H.M.S. Spartiate, Capt. J. Whylock, R.M., Lieutenant W. J. Collins, R.N.

Sparrow, *Cutter*—Lieut. C. W. Riley, Portsmouth harbour.

Spartiate, 74—Rear-Admiral Sir M. Seymour, Capt. R. Tait, 11th July at Rio Janeiro.

Speedwell, 5—Lieut. Crooke, 17th May arrived at Maranham.

Speedy, *Cutter*—Lieut. J. P. Roepel, 5th Sept. in Hamoaze.

Stag, 46—Capt. N. Lockyer, Sept. 12th in the Tagus.

Swan, 10—Lieut. J. E. Lane, North Sea station.

Sylvia, 1—Lieut. T. Henderson, Portsmouth station.

Talavera, 74—Capt. E. Chetham, 12th Sept. Tagus.

Talbot, 28—Capt. R. Dickinson, C.B. 24th March at Mauritius: expected home.

Thunder, S. V.—Commander R. Owen, 18th July left Madeira for Demerara.

Trinculo, 18—Lieut. Com. Thompson, captured on the 7th July the Secundo schooner, with 307 slaves, and sent her to Sierra Leone, under charge of Mr. Hollinsworth, mate.

Tweed, 20—Com. A. Bertram, 6th July left Port Royal for Bermuda; 31st July left Bermuda for Jamaica.

Tyne, 28—Capt. C. Hope, 31st March arr. at Callao from Islay; 4th April sailed for Arica.

Undaunted, 46—Rear-Adm. Warren, Capt. E. Harvey, 26th June Cape of Good Hope; 28th June sailed for Madras.

Vernon, 50 — Vice-Admiral Sir G. Cockburn, K.C.B., Capt. Sir G. A. Westphal, Knt., 28th July at Halifax; arr. 13th.

Vestal, 26—Capt. W. Jones, 12th Sept. sailed for Plymouth in company with Lightning; 20th Sept. sailed from Plymouth.

Victor, 18—Com. R. Russell, 3d Aug. left Barbadoes.

Victory, 104—Adm. Sir T. Williams, G.C.B., Captain C. R. Williams, Portsmouth.

Viper, 6—Lieut. H. James, 12th Sept. in the Tagus.

Volage, 28—Capt. G. B. Martin, C. B. 1st Aug. left Malta for Nauplia.

Wasp, 18—Com. Jas. Burney, Portsmouth, 26th Aug. went out of basin; 14th Sept. sailed to join the Lightning; 20th Sept. sailed from Plymouth.

Wolf, 18—Com. W. Hamley, 1st Feb. arrived at Singapore.

Paid off.

Favorite, 18—31st Aug. Portsmouth.

Ætna, 6—10th Aug. Portsmouth.

Raven, *Cutter*—10th Aug. Portsmouth.

Philomel, 10—At Chatham; 8th August sailed from Gibraltar; 31st Aug. arrived at Sheerness; 14th Sept. paid off.

Commissioned.

Favorite, 18—Portsmouth, 1st Sept.

Ringdove, 16—Plymouth.

Cruizer,* 16—Sheerness.

Ætna, 6—Portsmouth, 11th Aug.

Raven, *Cutter*—Portsmouth, 11th Aug.

Forrester,† 10—Plymouth.

Andromache, 28—*new*. Plymouth.

VARIETIES.

To the Editor of the Nautical Magazine.

Sir—In No. 17 of your valuable Magazine for the present month (July) is an account of the Navy of the United States, in which I observe twelve ships of seventy-four guns, and none larger.

Now, Sir, although some of your readers are aware that the *rateing* of the American Navy is very different from our own mode, there are many who know nothing about the matter: to such it may be well to be informed, that an American 74 is, to all intents and purposes, a 110 or 120-gun ship, and, in fact, larger than our splendid Waterloo, of 120 guns, so recently launched.

The Ohio, of these seventy-fours, I am acquainted with. She is an enormous vessel of 2700 tons, with a fifty-two feet beam, carrying 110 guns.

I have also had an opportunity of going alone over the Pennsylvania, on the stocks at Philadelphia, when I took a note of her dimensions with as much accuracy as I could without assistance.

Not being a nautical man, I must be pardoned any technical ignorance in my description. She, too, is called a 74, but is intended to carry 144 guns, most of which (42-pounders) were lying ready in the yard. I made her deck 225 feet, breadth of beam 59, depth from taffrail, nearly 80 feet. Her measurement, I was afterwards informed, would be 3,100 tons, and her crew 1,200 men. Now, as compared with a British seventy-four, there is in the vernacular of the United States, "a pretty considerable difference, I guess,"

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* See No. 11, and preceding, for former services.

† See No. 14, and preceding, for former services.

Of course, this is well known to our naval men, some of them having found it out to their costs towards the conclusion of the war, in their engagements with the United States frigates.

Frigates, so called, of forty-four guns, which I have found carrying sixty-four guns of heavy metal, and, in point of size, still superior, being equal to British seventy-fours.

I am, Sir, your's truly,
N. GOULD.

July 10, 1833.

A few hours previous to the arrival of the Ætna, her tender, a frigate's barge decked over, about four and a half tons burthen, run into the harbour, having parted company with the Ætna off Cape St. Vincent. This little vessel is commanded by Mr. Moneypenny, a mate of the ship, with a crew of six men, and was nineteen days without receiving any assistance or succour from any ship; her last oil and last fire-wood was expended when she arrived. The Ætna left Gibraltar on the 25th ult. Her late duty had been to survey the Esquerques rock, between Sicily and Africa, a dangerous coral rock, having only two feet of water on it, but on which a light-house may be built, or near which a light vessel ought to be moored, or at least a beacon.—She came into harbour on Monday, to refit.—*Hants. Tel.*

Sale of Ships of War.—Recently, pursuant to order given by the Commissioners for executing the office of Lord High Admiral, there were offered for sale, at the Admiralty-office, Somerset-place, several of His Majesty's ships of war, which have been found unfit for further public service.

The ships and vessels declared for sale were the following:—The Renown, 74 gun ship, of the burden of 1,899 tons; the Bittern sloop of war, of 422 tons; the Zenobia brig, of 385 tons; the Protector brig, of 178 tons; the Plumper gun-brig, of 181 tons; the Manley ditto, of 180 tons; the Albatross schooner, of 67 tons; the Supply transport, of 223 tons; and the Maria tender, of 17 tons burden; together with a mooring lump of 91 tons burden.

The sale took place before two of the Commissioners for executing the office of High Admiral, and by what is termed Dutch auction—that is, the vessels were put up by the auctioneer at a given price, and if there is no bidder, he lowers the sum until a buyer is found for the ship offered. By the conditions of sale, purchasers are bound to give an affidavit that the vessels purchased will not by any private agreement be resold, and that no other persons have an interest in the purchase than those whose names were given as the purchasers at the time of sale. It is also provided that all copper and mixed metal articles marked with the broad arrow, which shall be found in the said vessels, must be returned into the King's stores, at the dock-yard, an allowance of 8½d. per lb. being given for the former, and 6d. per lb. for the latter.

The Renown, 74 gun ship, coppered and copperfastened, was put up by the commissioners at £9,000, but no bidder was found at the reduced price of £5,700, when it was taken in. The Bittern sloop was put up at £2,000, and the price reduced to £1,930, at which a purchaser was found. The Zenobia was bought in at £900. The Protector brig was put up at £500, and was sold at £435. The Plumper was offered at £500, and taken in at £460. The Manley brig was bought in at £650. The Albatross was offered at £400, but the price reduced to £155, at which it was disposed of. The Supply transport was put up at £2,300. and bought in at £1,200. The upset price of the Maria tender was £60, and she found a purchaser at that sum immediately. The mooring lump was offered at £200, and sold at £195. The sale was not fully attended.—*Hants. Tel.*

The Lords of the Admiralty have ordered a certain proportion of blue cloth and blue Flushing, to be supplied to the Navy, in lieu of made up jackets and trousers; an order which cannot fail to give satisfaction throughout the fleet. Seamen, &c. will thereby be enabled to have those articles made up on board, fitted to each respectively, instead of wearing the unseemly clothing hitherto issued.—*Devon Tel.*

The Medea, a first-rate steam-vessel, was launched on the 2d September, at three o'clock, P. M. from the dock-yard at Woolwich, before an immense number of spectators. She went off in beautiful style. The Medea is constructed by Mr. Oliver Lang, the builder of that yard, and is the largest steam-vessel ever built for his Majesty's service.—*Ports. Her.*

A return of the tonnage of the Irish ports in the year 1833:—Baltimore, 2,489; Belfast, 25,151; Coleraine, 292; Cork, 18,016; Drogheda, 2,715; Dublin, 22,972; Dundalk, 584; Galway, 940; Limerick, 2,607; Londonderry, 6,262; Newry and Strangford, 7,288; Sligo, 1,134; Waterford, 11,455; Westport, 97; Wexford, 6,178—total, 108,128 tons.—*Times.*

The Emperor of Russia has appointed his son, the Grand Duke Constantine, aged six years, Grand Admiral of the Empire, and presented him as such to the fleet assembled at Cronstadt.—*Times.*

Trade of the Port of Plymouth, from 30th April to 31st August.—During these four months forty-eight vessels have entered with cargoes for this port from abroad (exclusive of a number of small vessels constantly running to and from Guernsey and Jersey,) consisting of 10,328 pieces of timber; 200c. 1q. 14 odd deals and ends; 14c. battens; 325 masts and spars; 183c. 1q. 22 odd staves; 101 fathoms lathwood; 734 pieces oak plank; 1c. handspikes; 295 barrels pitch; 3879 barrels tar; 915 bundles hemp; 189 packs flax; 1135 casks tallow; 716 bars iron; 5 casks potashes; 40 pipes, 100 hhds, brandy; 65 puncheons, 29 hhds. 18 barrels rum; 32 pipes, 109 hhds. 33 quarter casks wine; 111 chests, 478 boxes oranges; 227 boxes lemons; 4,100 bushels wheat; 280 quarters beans; 288c. cork; 1080c. valonea; 504c. sugar; 10 tons logwood; 480 quintals cod-fish; 1302 bundles rushes; 1251 burr stones; 8 tons plaster of Paris; 60 barrels pork; 20 barrels beef; 100bls. flour; 30bls. peas; 50 firkins butter; and 429 bags bread. Of the above 48 cargoes,

29 were for merchants at Plymouth,
5 ditto Devonport,
1 ditto Stonehouse,
2 ditto Tavistock,
7 H.M. Dock-yard, and
4 divided between the above towns.
—*Devon. Tel.*

An order has been issued by the Lords Commissioners of the Admiralty, directing that Mishipmen, who have passed for Lieutenants one complete year, shall be eligible to fill the rateings reserved in each ship, according to their circular of January 10. 1833.—*Ports. Her.*

Wages.—Capt. Ranson, of the Rapid, was summoned by the carpenter of that vessel, for deducting the surgeon's bill from his wages. The captain intimated that he had no doubt the man's illness was occasioned by immoderate indulgence in the use of an intoxicating beverage, distilled from rye, used by the Russians. It appearing, however, that the cause of illness was a severe cold, the Mayor said Mr. Ranson must pay the man the whole of his wages, and the expenses.—*Hull Adver.*

THE FALKLAND ISLANDS.

The following correspondence, relative to the occupation of the Maluinas by Great Britain, has been published by the Government of Buenos Ayres:—

TO THE HON. HOUSE OF REPRESENTATIVES.

"Buenos Ayres, Jan. 24, 1833, 24th year of the liberty, and 18th of the independence, of the Republic.

"If great has been the pain which the Government has felt on receiving the news of the violent abuse of power exercised in the Maluinas by a vessel of war belonging to His Britannic Majesty, in dishonour of the Argentine flag, in violation of the integrity of the territory of the Republic, of its rights, of justice, and of the faith due to the relations of friendship and good understanding cultivated without interruption with the Court of St. James's, it feels no less in acquainting the hon. representatives with that new and scandalous aggression committed in the Maluinas by an officer in the English navy—an aggression rendered more remarkable by the reciprocal relations and treaties of friendship and commerce existing between the two countries, than that which was last year committed by the officer of another friendly nation—the United States of North America.

"The schooner-of-war Sarandi anchored in the outer roads on the 15th instant, on her return from Port Luiz de la Soledad, in the Maluina Islands. Her commander, Don J. M. Pinedo, reports, that he has returned from thence, prior to receiving orders for so doing, on account of His Britannic Majesty's vessel of war Clio having, on the 2d of this month, arrived in the island of Soledad, at a time when, owing to the insubordination of a few of the soldiers of the garrison, the chief of the establishment had been killed, and good order disturbed (in the restoration of which the naval commander was occupied when the Clio arrived :) that having sent two of his officers on board the Clio, to make the corresponding offers of attention and friendship, they returned, and informed him that Mr. Onslow, the commander of His Britiannic Majesty's sloop, intended to go on board the Sarandi, which he did on the same day, about three in the afternoon, accompanied by two of his officers; and entering into conversation with the commander of the Sarandi, he informed him that he came to take possession of the Maluinas, as belonging to His Britannic Majesty; and that he had positive orders to hoist the British flag thereon within twenty-four hours; as he had already done in other ports of the said islands; and to give passage in a vessel to the officer and troops stationed there, and to the other inhabitants; and to cause every thing belonging to Buenos Ayres to be embarked and sent off; in consequence whereof he requested that the Argentine flag, which was then flying on shore, might be struck the following day, as he was bound to fulfil the orders he had received.

"The surprise of Commandant Pinedo, under such circumstances, was as natural as was unexpected the aggression and violent spoliation which caused it, considering that this gross outrage was committed by a friendly and powerful nation, which has always boasted of its fidelity and moderation, and which has lost no opportunity of manifesting the cordiality of its kind feelings towards the Argentine Republic. Notwithstanding, after having made to Captain Onslow the corresponding protests, and remarking to him that if the two Governments were in peace and friendship this proceeding was unaccountably strange, he told him that his duty would not allow him to consent to this unjust pretension without receiving express orders from his Government. Mr. Onslow then took his leave, telling Commandant Pinedo that he would reply to him in writing.

"In effect, about 4 o'clock in the afternoon of the same day (the 2d,) the said commandant received the note of which the subjoined No. 1, is a copy: and on view of the intimation therein contained, he wished to resist at all hazards, when he met with difficulties which he considered insurmountable; nevertheless, he resolved to send a deputation which, in the name of the Government, should repeat to Mr. Onslow the former protests, and inform him, that if he contemplated executing his project by force, he should consider himself bound to resist it, and that he therefore hoped Captain Onslow would prefer waiting until the Government should have marked out to him (Pinedo) the line of conduct he ought to pursue.

"It was more than ten o'clock at night when the deputation returned on board the Sarandi, without having been able to obtain an interview with Captain Onslow.

"In this state of affairs, after having endeavoured to surmount the difficulties which, in his opinion, would render the most desperate resistance unavailing, he became thoroughly convinced of it; and at six o'clock on the morning of the 3d he went personally on board the sloop Clio, and, for the last time, protested to her commander against the violation he was about to commit. Captain Onslow replied to him in the sense of the latter part of the subjoined note, assuring him that he could not defer the execution of the orders he had received for taking possession of the Maluinas; that he could see what force he had, and that he was in momentary expectation of more; that he, Commandant Pinedo, could therefore act as he might think fit.—Commandant Pinedo immediately withdrew, declaring Great Britain responsible for the insult, and the violation of the dignity of the Republic and of its rights, which were thus inconsistently and disrespectfully trampled on by force; that he was going to withdraw, but that he would not strike the flag on the shore.

"Consequently, Commandant Pinedo returned to his vessel: and adopted, among other measures, prior to setting sail, that of prohibiting those on the island from lowering the Argentine flag, and of conferring the command of the establishment, in writing, on the overseer of the establishment, Don Juan Simon, who was going to remain, with some others.

"At nine o'clock in the morning of the 3d, three boats, manned with seamen and marines from the English sloop, landed at the point of Port Luiz, and placing a staff at the house of an Englishman, about four squares distant from the commandantcy, they hoisted thereon the British flag, and then proceeded to strike that of the Republic, which was still flying; and which was immediately delivered to the Sarandi by an officer sent for that purpose. Captain Pinedo was ready on that day to remove from the scene of the insult; but the weather obliged him to remain the whole of the 4th and up to five o'clock on the evening of the 5th, when he set sail.

"The facts, as transmitted by the Government to the hon. representatives, in conformity with the official despatch of the commander of the schooner Sarandi, exhibit a most flagrant abuse of power, and belie the friendly protestations it was accustomed to receive from a nation with which it endeavoured to maintain the best understanding, by scrupulously fulfilling the duties imposed on it by the existing treaties, and exercising a generous liberality, in proof of the most sincere friendship. By the copies Nos. 2, 3, and 4, the Hon. representatives will learn what steps have been taken by the Government in this serious and delicate affair; and likewise its firm resolution to maintain the rights of the Argentine Republic, and not to come to any accommodation inconsistent with the national honour; taking every measure which justice and prudence may dictate, for the purpose of obtaining from the Cabinet of His Britannic Majesty full reparation, the acknowledgment of our right to the Maluinas, and the exercise of our dominion over that territory; and should this not suffice, then to adopt such measures as may be most conducive to obtaining a declaration of the opinion of the world, to which a Government like that of England, which wishes to be considered as ranking among the most free and enlightened of Europe, cannot be indifferent.

"God preserve the Hon. Representatives many years.

"JUAN RAMON BALCARCE.
"MANUEL VICENTE DE MAZA.

No. 1.—(Copy.)

"His Majesty's sloop Clio, Berkeley Sound, 2d January, 1833.

"Sir,—I have to acquaint you, I have received directions from his Excellency the Commander-in-chief of his Britannic Majesty's ships and vessels of war on the South American station, in the name of his Britannic Majesty, to execute the 'rights of sovereignty over these islands.'

"It is my intention to hoist to-morrow morning, the national flag of Great Britain on shore, when I request you will be pleased to haul down your flag on shore, and withdraw your forces, taking with you all stores, &c., belonging to your Government.

"I am, Sir, your most obedient humble servant,

"J. J. ONSLOW, Commander.

"His Excellency the Commander of the Buenos Ayrean forces at Port Luiz, Berkeley Sound."

No. 2.—(Translation.)

"Department of Foreign Relations, Buenos Ayres, January 16, 1833, 24th year of the liberty, and 18th of the independence, of the Republic.

"The undersigned Minister of Grace and Justice, charged provisionally with the Department of Foreign Relations of the Argentine Republic, has the honour to address the Chargé d'Affairs *ad interim* of His Britannic Majesty in this city, to acquaint him, that the Government has just learned that the Commander of His Britannic Majesty's sloop-of-war Clio, has taken possession of the Island of La Soledad, in the Maluinas, hoisting the British flag where that of the Argentine Republic waved. This unexpected event has sensibly affected the feelings of the Government of Buenos Ayres; and although it cannot discover anything to justify such a proceeding, nevertheless, presuming that the Chargè d'Affaires whom the undersigned addresses, is informed upon a measure which openly compromises the dignity and rights of the Argentine Republic, it has directed the undersigned to request of the Chargé d'Affaires of His Britannic Majesty the competent explanations.

"God preserve the Chargé d'Affaires many years.

"MANUEL VICENTE DE MAZA.

"To the Chargé d'Affaires *ad interim* of his Britannic Majesty."

No. 3.—(Copy.)

"Buenos Ayres, January 17, 1833.

"The undersigned, His Britannic Majesty's Chargé d'Affaires, in acknowledging the receipt of the note, dated yesterday, of his Excellency Senor Don Manuel Vicente de Maza, Minister charged with the Department of Foreign Relations of the Argentine Republic, has the honour to inform his Excellency that he has received no instructions from his Court to make any communication to the Government of Buenos Ayres upon the subject to which his Excellency's note refers.

"The undersigned will hasten to submit it to His Majesty's Government, and he avails himself of this opportunity to repeat to his Excellency Senor de Maza the assurance of his high and distinguished consideration.

"PHILIP G. GORE.

"To his Excellency Senor Don Manuel Vicente de Maza, &c., &c."

THE CLAIMS OF WILLIAM SYMINGTON* TO THE INVENTION OF THE STEAM-BOAT.

Sir.—Acknowledging with gratitude the attention you have devoted to the claims of the late William Symington, and the liberality with which you have commented upon them in your valuable journal, I beg leave to observe, that I am not aware of any passage in my pamphlet denying the existence of the idea prior to Mr. Symington's invention, of the possibility of rendering steam available for the purpose of navigation. What I maintained was, that Jonathan Hulls and all other speculators who had preceded him, were unsuccessful, and this position I cannot yet see any just reason for abandoning.

You have stated your belief that Hulls was no farther unsuccessful than in not finding encouragement. But, sir, in entertaining and avowing such a belief, you place yourself in opposition to that not only of many skilful mechanics with whom I have conversed, but also to that of the most distinguished writers on the subject. I believe it will but require your deliberate consideration of the following particulars to change the sentiments which you have expressed.

The imperfection of the steam-engine during Mr. Hull's time, the disproportion of his boat to the size of the ship which it is represented as towing; and the use of the subjunctive mood in describing his invention, fully warrants the conclusion that the project was realized but in the closet.

As Mr. Symington invented the mode which he himself adopted, as it is the one which has been practised by those who were his successors, and as it is the one now universally employed; surely I am warranted in claiming for him the invention of rational and efficient steam-navigation.

The following quotation from Elijah Galloway's work on the steam-engine, clearly exhibits this gentleman's opinion of the impracticability of Mr. Hull's project, and also the cause of the want of success experiences.

"ON STEAM NAVIGATION."

"The idea of propelling vessels by the steam-engine appears to have been entertained as soon as that machine had its existence. Savery, in his Miner's Friend, mentioned the possibility of propelling vessels by steam; but never attempted to carry his project into effect. After the introduction of

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* With the view of assisting Mr. Bowie all we can in the investigation of the invention of the Steam-boat, we have inserted the above communication.

Newcomen's engine, various attempts were made to obtain a revolving motion, by which the engine might be applied to machinery in general. These chiefly failed from defective machinery. Among such attempts we find the invention of Mr. Jonathan Hull's, of London, who, in 1736, took out a patent for the application of the crank to the steam-engine, by which addition he proposes 'to carry vessels or ships out of, or into harbour, port, or river, against wind or tide, or in a calm.'

"We need not say that this project was not carried into execution, the application of the crank to the single acting engine has always been found a matter of great difficulty, because as the ascending stroke has to be effected by a counter-balance, an immense fly-wheel is necessary, to produce any thing like regularity, and it would be *absolutely impossible* to use such a fly-wheel in a boat. In consequence of the want of *proper machinery*, Hull's idea fell to the ground; and, indeed, was so completely forgotten, that Mr. Watt actually took out a patent for the application of the crank to the steam-engine."

Another passage in the same work applies so admirably to my lamented relative, that I cannot refrain from extracting and sending it, with an anecdote illustrating its truth, for your perusal.

"An obscure projector mentions the possibility of effecting an important improvement in art—he, with his project, perishes, and is forgotten. In the course of time a mighty genius arises, the Newton of his day, and boldly vanquishes the difficulties from which his predecessors have shrunk, and brings the desired object into successful operation. The world wonders at the discovery; and is surprised that so simple a thing has never been conceived before. It inquires whether no previous attempts have been made at so beneficial a speculation, and in this inquiry the worm-eaten pamphlet of the proector is handed from the shelves of the curious, and the well-earned wreath is wrested from the brow of him who, by sacrifice and perseverance, has attained this object, to be placed on his who never went one step in its prosecution."

Jonathan Hull's pamphlel was discovered in the library of the late Earl of Murr. subsequent to the year 1814, and sent to Mr. Symington's legal adviser in Edinburgh, who acquainted his client of the discovery, and its contents. This was the first intimation my unfortunate friend received that Mr. Hull or his invention had ever been in existence. The pamphlet, whether worm-eaten or not, was produced, and formed one of the pretexts for depriving him, who had sacrificed his time and means in giving to the world the benefits of his invention, of the reward to which he was so well entitled.

Permit me, in conclusion, to observe, that, laying claim to but little skill in mechanics, advancing no pretensions to being an amateur of the science, I have on all mechanical points consulted and been guided by the opinions of intelligent, able, and eminent theoretical and practical mechanicians; and that, on all other matters requiring the exercise of my own judgment I have scrupulously avoided making any statement which seemed to me inconsistent with truth or probability. The chronological errors which on a former occasion I used the liberty of bringing under your notice will be rectified in a future publication.

I have the honour to remain,
Sir,
Your most obedient humble servant,
ROBERT BOWIE.

74 Bishopsgate-street, Within, Aug. 7, 1833.

To the Editor of the Nautical Magazine.

It was mentioned in our paper of the 24th ult., that the Captain, Officers, and crew of the Belvidera, had forwarded a marble monument from Malta, to be erected over the remains of Lieutenants Garrett and Ogden, who were accidentally drowned. It was sent to the Consul of Tripoli, not Tunis, as was stated, as it was off the city of Tripoli the accident occurred. The following is the inscription:—"Sacred to the memory of Lieutenant G. M. Garrett, R.N. aged 25 years, and Lieutenant R. Ogden, R.M. aged 41 years, of H.B.M. ship Belvidera who were unfortunately drowned on the morning of the 10th of April, 1833, in consequence of the upsetting of a boat, near the reef of rocks below this their last resting place. The Captain, officers, and ship's company have unanimously caused this monument to be erected over their remains, as a token of respect for their memory, and sorrow for their untimely fate. Few ever lived more esteemed; none ever died more deeply lamented by those who best knew them.—*Hants. Tel.*

We had intended the following lines, extracted from the pages of the Hants Advertiser, for our last number, but could not find room for them. They are from the Prize Poem of a young gentleman, named Thomas Hare, of Bishop's Waltham Grammar School; and would do infinite credit to one of riper years:—

THE FIRST VOYAGE OF COLUMBUS, AND THE DISCOVERY OF THE WEST INDIES.

"WHEN science, bursting through the shades of night,
Spread o'er a darkened age her radiant light,
She gave to man the compass, as a guide
O'er the vast ocean's ever-sounding tide.
She raised adventurers on the billowy main,
Who sighed for glory, or who sought for gain.
'Mid these, Columbus, fraught with daring aim,
Seeks to obtain a never-dying fame."

"In Palos harbour lies the daring fleet,
The seamen rush to take a farewell greet;
How throbs each bosom when the signal-gun
Proclaims the far-famed voyage is begun;
Ah! hour of parting! Oh! what words can tell
The sad choked accents of the wild farewell?
Methinks I view a long and mournful band,
In seaman garb, upon the yellow sand
Their sorrowing friends surround the downcast few,
Heave the deep sigh, and weep their last adieu;
Dread, anxious dread, is mark'd in every face,
No sign of seaman hardihood I trace;
Doomed to obey a visionary's will, [quill.
And search for chimeras etched by fancy's
The heart repugnant clings to a dear home,
There friends and social ties forbid to roam;
But look, the barks are tossing in the bay,
The boats are tarrying—oh! away, away—
And are they gone? they are; the dash of oar
Sounds faint and fainter on the shelving shore.
Up flies the canvass, gallantly unfurl'd,
To waft th' adventurers to another world."

"No vent'rous bark had plough'd these waves before,
None 'mid this trackless ocean plied the oar.
Perchance some wandering vessel, tempest toss'd,
By storms impelled, this waste of waves had cross'd;
But none returned the secrets to reveal,
Billows on billows, waves on waves conceal.
Fair blow the breezes, the redundant sail
Flaps gently fluttering to the freshening gale;
But still the seamen sickened at the view,
While o'er the waves the daring vessels flew."

"Now awful darkness casts her shades around;
Nor o'er the ocean creeps a single sound;
Worn by the conflict of his mighty mind,
To sadd'ning thoughts his soul the chief resign'd;
Sleep fled his lids, his refluent spirit flew
O'er painful scenes, his voyage, his murmuring crew,
As o'er the horizon ranged his searching eye
Land through the gathering vapours to descry,
His glance instinctive caught a feeble light,
At distance glimmering through the mists of night.
He paused, he stopped, another glance, again:
Perchance some planet in the etherial plane.
A signal-gun is heard. 'The shore! the shore!' [o'er.'
(The seamen shout) 'our pains, our sufferings
Oh! who can tell the transports of delight
That thronged the chieftain's bosom on that night.
Where now the theory of the bearded sage,
Deluded sophist of a darkened age?
One glorious moment hurl'd him from his height, [night.
Dispelled the gloom, and burst the bonds of
How the deep ocean's secrets were revealed,
Which dark obscurity had long concealed.
Night wanes; the vapours round the mountains curl'd, [world!
Melt into morn! Oh! hail thou new-born
A new-born world indeed—a lovely isle,
Around whose shores the rays of summer smile.
Smoke from the spicy groves is seen to rise,
In curling eddies to the placid skies."

"Mourn child of sorrows, hapless negro, mourn,
From ties of blood and kindred pleasures torn,
The galling links of slavery's iron chain,
And fell oppression with remorseless train,
O'er the loved land have cast a sombre gloom,
Dark and unseemly as the silent tomb.
"Muse, take the prophet's harp. I see
On those fair shores the form of liberty.
Behold the chains which held the abject slave
Fall from his limbs and sink beneath the wave;
Behold these islands in their God rejoice,
Roused by the sound of pure religion's voice;
See Christian temples rise in every grove,
Devoted to the God of peace and love.
No more shall eager Europe pant for gold,
Or Afric's sons be torn away and sold;
But a stream bursting from our own blessed land,
Shall scatter truth abroad on every hand;
The slave and master at one cross shall meet,
And the whole earth shall bow before the Saviour's feet."

PROMOTIONS AND APPOINTMENTS.

Promotions.

Lieutenant—A. Lethart.

Appointments.

Ætna S.V.—*Capt.* G. W. Skyring; *Lieuts.* T. Mitchell, H. Kellett, M. Arundell; *Mast.* J. Shepherd; *Surg.* J. Brown, M.D.; *Purser*, H. Price; *Assist.Surg.* D. Miller; *Mid.* H. W. Wray.

Andromache, 28—*Capt.* B. Yeoman.

Ascension Island—*Surg.* T. Mitchell, (*a.*)

Asia, 84—*Lieut.* Hon. K. Stewart; 1*st Lieut. Mar.* J. Fynmore.

Conway, 28—2d *Lieut. Mar.* C. Parker.

Cruizer, 18—*Com.* J. M'Causland. *Lieut.* C. H. Hamilton.

Dee, St. V.—*Boatsw.* J. Parsons.

Donegal, 78—*Com.* G. A. Sainthill.

Dublin, 50—*Lieut.* C. F. Newton.

Erebus—*Ord Gunner*, J. Roach.

Excellent 58, *Mate*, H. Mann; *Clerk*, S. Brooksby.

Favourite, 18—*Com.* G. R. Mundy; *Lieuts.* R. F. King, W. Toby; *Surg.* P. Martyr; *Purser*, C. Cole; *Assist. Surg.* W. Hobbs; *2d Mast.* G. C. Dowers; *Coll. Mids.* E. Beauchamp, R. H. Moubray; *Clerk*, H. Hastings; *Boatsw.* J. Cooke.

Forester, 3—*Lieut.* G. G. Mialls; 2d *Mast.* G. L. Bradly; *Clerk*, J. March.

Magicienne, 24—*2d Lieut. Mar.* G. A. Danvers.

Monarch, *Ord.—Boatsw.* J. Nuttall.

Ocean, 80—*Lieut.* M. Dixon; *Surg.* J. S. Swayne; *Purser*, J. Scott; *Assist. Surg.* D. Jardine; R. Gordon; *Capt. Mar.* C. A. Whiting; *Sec.Lieuts. Mar.* G. W. H. Doyel; H. Crespin; *Chaplain*, J. M. Edwards.

Plymouth Hospital.—D. Belcher. *Assist. Surg.*

Pylades, 18—*Assist. Surg.* C. Allison.

Raven, *Cut.—Lieut.* W. Arlett; *Assist. Surg.* W. Graham.

Ringdove, 16—*Com.* J. Barrow.

San Josef, 110—*Sec. Lieut. Mar.* J. G. Hayes.

Sparrow, *Cut.—Sec. Mast.* G. Grant.

Spartiate, 76—*Lieuts.* T. V. Auson; W. Houston; 1*st. Lieut. Mar.* E. A. Parker.

Spey, *Pack.—Assist. Surg.* G. Doak.

Sulphur—*Ord. Gunners*, T. Bell.

Sylvia, *Trans.—Lieut.* J. R. Baker.

Talavera, 74—Williams, *Mid.*

Vestal, 26—*Lieut.* E. St. Leger Cannon: *First Lieut. Mar.* R. O. Bridge; *Mid.* A. Wilson.

Wasp, 18—*Mast.* W. Jackson; *Mid.* W. N. Hoste; *Gun.* T. Soar.

Coast Guard—*Lieut.* T. Young.

Greenwich Hospital Out Pension—*Capt.* J. Wilson (*a*); G. Price.

Ordinary, *Plymouth—Surg.* J. E. Risk.

Midshipmen passed for Lieutenants. College. P. A. Allen; J. H. Blake; *Caledonia.* W. Church, *Ætna.* J. E. Frere, *Philomel* J. Hamilton, *Columbia.* O. J. Jones, *Victory.* G. Johnson, *Philomel.* H. H. Motley, *Victory.* Mr. Jagoe, Clerk of the *Challenger*, for Purser.

NEW MERCHANT VESSELS. FROM LLOYD'S REGISTER FOR 1833.

Reported to 20th August.

VESSELS.	RIG.	WHERE BUILT	TONS.
Anna Lettia	Schooner	Cardigan	107
Ariel	Schooner	Boston	57
Brothers	Sloop	Hull	57
Charles Hamerton	Brig	Tranmere	180
Concord	Schooner	Saltcombe	85
Congo	Barque	Chepstow	157
Edinburgh	Barque	Sunderland	270
EllenGerman	Snow	Liverpool	173
Emma	Schooner	Yarmouth	153
Emma Eugenia	Ship	Whitby	385
Enfield	Schooner	Lynn	120
Friends of Liberty	Schooner	Southampton	90
Gazelle	Schooner	Greenock	186
Grecian	Brig	Maryport	99
Helen	Sloop	Hull	50
Henry	Brig	Biddeford	93
Indian Chief	Schooner	Poole	113
Ino	Ship	Whitehaven	233
Jane Emily Hudson	Schooner	Wick	120
Mary Walker	Brig	Dumbarton	199
Ouse	Snow	Sunderland;	257
Panuco	Schooner	Dundee	106
Phœnix	Ship	Isle of Man	61
Ranger	Schooner	Plymouth	84
Rebel	Schooner	Yarmouth	130
Redbreast	Schooner	Sunderland	153
Rowena	Schooner	Belfast	102
Singapore	Barque	Aberdeen	302
Star of Brunswick	Schooner	Biddeford	77
ThreeBrothrs	Smack	Aberystwith	42

Reported to 20th September.

VESSELS.	RIG.	WHERE BUILT	TONS.
Adventure	Brig	Aberdeen	149
Alamode	Schooner	Poole	156
Alarm	Smack	Cork	50
Alert	Schooner	Milford	103
Beiram	Schooner	Yarmouth	135
Brian Boru	Schooner	Northwick	89
Catherine Elizabeth	Barque	River Thames	308
Chas. Carter	Schooner	Shoreham	175
Cornelius	Brig	Yarmouth	179
Courier	Brig	Sunderland	262
Ellen	Barque	Chepstow	345
Fairie Queen	Barque	Liverpool	300
Flora	Sloop	Hull	76
Folkstone	Barque	Cowes	409
FourBrothers	Smack	Port Maddock	44
Idas	Brig	Ilfracombe	159
Jane	Brig	Saltcoates	115
Jessie	Schooner	Perth	114
Ld. Stormont	Snow	Sunderland	264
Mary-Ellin	Schooner	Cardiff	127
Mazeppa	Schooner	Lymington	93
Pandora	Schooner	Newcastle	61
Queen of the Isles	Snow	Shields	170
Tyro	Brig	Yarmouth	175

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1833.

Continued from page 556.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
452 Agenoria	Beat	——	——	Ingoldmills	1 Sept.	Crew saved.
453 Albion	Parker	Of Boston	——	Tunstall	1 Sept.	Total.
454 Albion	Scotland	Of Kincardine	——	Carlscrona	27 Aug.	Crew saved.
455 Alfred	Of Aberdn.	——	Foundered	Off Whitby	30 Aug.	All perished.
456 Amicus	Hitchcock	Sunk in	Channel	Lynn	31 Aug.	Crew saved.
457 Amity	Nicholls	Of Fowey	Near North	Somerwats	4 Sept.	
458 Amphitrite	Hunter	London	N. S. Wales	Boulogne	31 Aug.	Crew, four saved.
459 Andrew and Margaret	Quay	Maryport	Cardiff	North Barws.	31 Aug.	Crew saved.
460 Anna Maria	Lenan	Hamboro'	Hull	Terschilling	1 Sept.	
461 Anne and Amelia	Compton	Calcutta	London	Bergues	31 Aug.	
462 Ann & Mary	——	London	Newcastle	Schowen I.	6 Sept.	Crew saved.
463 Ann and Susannah	——	——	——	RobinHd'sB	30 Aug.	
464 Argo	Luckes	Stockton	——	Coast Norfolk	5 Sept.	
465 Betsey	Couch	London	Padstow	W. Capelle	1 Sept.	Crew saved.
466 Betsey	——	Woodbridg	——	Waholm	1 Sept.	Total.
467 Britannia	Ross	Whaler of	London	Comora I.	16 Jan.	
468 Britannia	Metherell	Liverpool	Newfndld.	Off Bardsey I	2 June	Run foul of, & sunk.
469 Brothers	——	Havana	Guernsey	Carysfort R.	20 July	Crew saved.
470 Catherine	——	Halifax	——	Seven Brothr.	8 July	StDomingo, doubtf.
471 Ceres	Rendle	Newfndld.	——	Magdalen I.	20 June	Crew saved.
472 Chance	Coal laden	——	——	Near Specton	1 Sept.	Total.
473 Chance	Nicholson	Of Goole	——	Near Filey	31 Aug.	Crew saved.
474 Charlotte	——	Deal	Antwerp	Goodwin S.	1 Sept.	Crew saved.
475 Chevrington Oak	——	——	——	Off Dunkirk	2 Sept.	Foundered.
476 Coaster	Palmer	Shields	——	Haisbro'	31 Aug.	Crew drowned.
477 Cyrus	Dawson	Leghorn	London	Off Guernsey	2 Sept.	Crew saved.
478 Diana	Cole	——	——	Scarboro' Pr.	31 Aug.	Crew saved.
479 Dorothy	Rees	——	——	Near Filey	31 Aug.	One saved only.
480 Dorothy	Garnock	Liverpool	Bombay	29° S. 20° W.	4 July	
481 Druid	Davis	Shoreham	——	Widenwuth	31 Aug.	
482 Eagle	Lawson	Stockton	Rotterdam	Bridlington	1 Sept.	Crew saved.
483 Eagle[*]	Cole	Berbice	Barbadoes	At Sea	June	By Fire.
484 Eamont[†]	Carr	Portsmouth	N. Orleans	Barbuda	June	Crew saved.
485 Earl of Wemyss	Nesbitt	Leith	London	Near Wells	31 Aug.	
486 Ebenezer	Radford	St. Vincent	Bristol	Port Isaac	31 Aug.	Crew saved.
487 Eden	Smith	Helgoland	——	Heaps Sand	1 Sept.	
488 Fairy	——	Newcastle	Gainsboro'	Holme Sand	1 Sept.	
489 Fanny	Bedlington	Colchester	——	Salthouse Bh.	1 Sept.	
490 Feronia	Stern board	washed on	shore at	Blakeney	6 Sept.	All lost, supposed.
491 Flora	A schooner	Stern wash	ed on shore	Whitstable	4 Sept.	
492 Flora	Wilkie	——	——	Maplin Sand	30 Aug.	Crew saved.
493 Fortitude	Of Newcas.	——	——	Off Spurn	10 Sept.	
494 George and Elizabeth	Hicks	Newcastle	——	Goodwin S.	1 Sept.	Crew saved.
495 Gilbert Henderson	Tickle	Quebec	——	Magdalen I.	25 July	Crew saved.
496 Glory	Softby	Newport	Liverpool	Penrath	21 Aug.	Crew saved.
497 Good Intent	Gilton	Youghal	——	St Mary's Bay	22 July	
498 Greenwich	Tovvey	Whaler of	London	Seychelle I.	18 Feb.	Crew saved.
499 Harmony	Craister	London	——	Off Skegness	31 Aug.	Crew saved.
500 Helen	——	Newcastle	Exeter	Calais	1 Sept.	Crew saved.
501 Hebe	Yacht	Supposed	——	Off C. Wales	31 Aug.	All lost.
502 Hebe[‡]	Straughan	London	Quebec	Near C. Ray	10 July	Crew saved.
503 Hope	Alexander	Berwick	——	At Sea	27 Aug.	Crew saved.
504 Hope	——	London	Quebec	Flint I.	22 May	Crew saved.
505 Hope	Stanton	Sydney	Newfndld.	Langlois I.	8 Aug.	Crew saved.
506 Hull Packet	Hare	Antwerp	Leith	Holderness	1 Sept.	Crew one saved.
507 Jane	——	Newport	——	St. Bride's B.	31 Aug.	
508 Jane and Catherine	——	Workingtn.	——	Off Whitehav.	31 Aug.	All perished.
509 Juno	Hill	Sunderland	——	Near Filey	31 Aug.	Crew saved.

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[*] Crew saved, after being two days and nights in their boat.

[†] Wreck sold for £5.

[‡] In our 14th number, p. 183, art. 25, will be found some valuable remarks on the navigation at the entrance of the Gulf of St. Lawrence, with which all masters of vessels trading to Quebec should be acquainted.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
510 Juno	Fairburn	Shields	—	Sunk Sand	3 Sept.	
511 Juno	Russell	Liverpool	St. Thomas	At Sea	19 July	By fire, crew saved.
512 Laburnum	Brown	Sier. Leone	Liverpool	Abandoned	23 May	
513 Lady Milner	—	Of Whitby	—	Harbro' Sand	18 Sept.	Crew two saved.
514 Lark	Lokers	Sunderland	Bridlington	Filey Sand	31 Aug.	? Crew saved.
515 Lively's Increase	Campion	Of Whitby	—	Near the Span	31 Aug.	? Crew saved.
516 Lorton	Duncan	St Domingo	Nassau	Off Egg Isle	2 July	Crew saved.
517 Love	Murray	—	—	Gabaries Bay	26 Aug.	Of Scarborough.
518 Loyal Standard	—	—	—	North Sea	10 Sept.	
519 Maria	Crokatt	Hamboro'	Liverpool	Terschelling	1 Sept.	
520 Malvina	Brown	Archangel	London	Mouse Sand	6 Sept.	Crew saved.
521 Margaret	Osler	—	—	Lynn Roads	31 Aug.	Crew perished.
522 Margaret	Lord	Newcastle	Aldboro'	Not heard of	since	30th Aug.
523 Mary	Johnson	Lynn	—	Off Hornsea	31 Aug.	
524 Mary-Ann	Hann	Archangel	Plymouth	White Sea	16 Aug.	Crew saved.
525 Mary and Isabella	Oates	Of Newcastl	—	Near Filey	31 Aug.	Crew perished.
526 Mayflower	Fox	Seaham	—	Snetterham	2 Sept.	Master drowned.
527 Merchant	Rosewall	Stettin	London	Sunk Sand	1 Sept.	Crew saved.
528 Mermaid	Dennis	Of Sundrld.	—	Lincoln Coast	1 Sept.	Total.
529 Minerva	Brewis	Newcastle	South'ton	Off Blakeney	8 Sept.	Crew saved.
530 Nelly	Scorra	Sunderland	—	Speymouth	29 July	
531 Neptune	Laing	Of Lynn	—	North Sea	Sept.	Crew drowned.
532 Norfolk	Bayfield	—	—	Remton	31 Aug.	
533 Olive	Theobald	Liverpool	G. Coast	B. Benin	April	Capsized, 1 cw. drn.
534 Peggy	—	Wexford	Liverpool	Dee R.	20 Aug	
535 Phillis	Hissock	Newfndld.	Quebec	Ingonish	25 June	Crew saved.
536 Phœbus	—	Sunderland	—	Sunk Sand	31 Aug.	Abandoned.
537 Ponsonby	Roundtree	Sunderland	London	Off Wellsthop	31 Aug.	Crew 3 drowned.
538 Planter	Chambers	Miramichi	Newfndld.	P. Edw. Isl.	10 July	
539 Platoff	Burnick	Sunderland	Sandwich	Sandwich B.	30 Aug.	Crew saved.
540 Ranger	Christie	Cuba	Sunderland	—	—	
541 Reaper	Bryan	Hull	—	Near Filey	4 Sept.	
542 Rowena	Walker	Guernsey	Chatham	Off Dover	12 Sept	Foundered, cw. sd.
543 Sappho	Duncan	Savana	St John' N B	Wolves	2 July	Crew saved.
544 Sarah	Frank	St Lawrenc.	Greenock	Richibucto	? 1833	
545 Science	Whitfield	Quebec	Sunderland	Huna	22 Aug.	?
546 Scarborough	Raywood	Shields	Worthing	Not heard of	since	30th Aug.
547 Shipwright	Cook	Sunderland	Maldon	North Sea	2 Sept.	Abandoned.
548 Sloop	Foundered	—	—	Off Strumbl H	31 Aug.	Crew perished.
549 Sloop	Name	unknown	—	N. Puffin I.	31 Aug.	All perished.
550 Sophia	Acock	Whaler of	London	3 S 54 W	16 Mar.	By fire, crew saved.
551 Swift	Lee	Of London	—	Ingoldmills	31 Aug.	Crew perished.
552 Swift	Quayle	Strangford	Liverpool	Dutchm. Bk.	1 Sept.	All perished.
553 Talbot, *St.V.*	Major	Ostend	London	Ostend	1 Sept.	Crew saved.
554 Thetis	Blamer	Jersey	London	Downs	29 Aug.	Crew saved.
555 Thorne	Crosby	—	—	Dourburg	1 Sept.	
556 Thos. Bunow	Dawson	Tortola	Lancaster	River Lune	30 Aug.	Master drowned.
557 Thule	Peacock	Savanilla	Of Liverpl.	Hogstles	25 July	Crew saved.
558 Trafalgar	—	Of Newcas.	—	Newcastle	31 Aug.	On Shore.
559 Trimmer	—	Of Whitby	—	Near Whitby	31 Aug.	On Shore.
560 Tyne	—	Berwick	—	Off Wells	31 Aug.	Crew perished.
561 Union	Payne	Woodbridg	—	Off Atwick	31 Aug.	
562 United Kingdom	Friend	Jamaica	—	Off Gravesnd.	15 Sept.	Run down.
563 Violet	Jennings	Newcastle	Cuxhaven	Borcum	12 Aug.	One boy only savd.
564 Waterloo	Seals	Sunk in	the Roads	Lynn	1 Sept.	Crew saved.
565 Wellington	Brightmore	Wells	Foundered	Humber	31 Aug.	Crew saved.
566 Wilna	Cooke	Of Brancaster	—	—	31 Aug.	
567 William	Friend	Metis	London	Calais	1 Sept.	Crew 10 drowned.
568 Zoe	—	Montreal	Newfndld.	?	?	No doubts of her loss.

FURTHER PARTICULARS OF WRECKS.

It has not fallen to our lot before, to record such extensive losses of life and property as have been produced by the severe gales which took place in the end of August, and the beginning of September; and it has been generally allowed by seamen, that they were the severest within their recollection in these latitudes. They commenced in the S.W. on the 29th Aug. and hauled gradually round to N.W. and N.E., lasting throughout the first week in September. Their consequences have been sad and distressing. Our shores have been literally strewed with wrecks, and many vessels have foundered unheard of and unseen. To relate the several accounts which we have, would fill a volume of our work with a lengthened tale of sorrow and suffering. We shall, therefore, leave our table of wrecks to impart the melancholy facts, adding one or two of the most important particulars concerning a few of the vessels; and we fear that even the extensive list it presents does not include the entire loss of British shipping.

Amphitrite.—Driven on shore about half a mile from Boulogne, on the night of the 31st August, having on board 125 female convicts, and several children, the whole of whom were lost, besides several of the crew and her captain. Inquiries have been instituted by Government respecting her loss, by which the conduct of the captain has been vindicated from aspersions thrown on him.

Earl of Wemyss.—Steam-vessel, between London and Leith. Driven on shore near Brancaster. Owing to the vessel filling so fast, several ladies and children were drowned in the cabin.

Thomas Burrows.—Driven from her anchorage off Sunderland—drifted on a bank, and capsized, by which the captain was drowned.

Alfred.—Of Aberdeen. Seen to founder off Whitby.

Swift.—Of Strangford, D. Quayle, master. Seen to strike on the Dutchman's bank, coast of Wales, and disappeared.

Princess Mary.—Accounts, dated 29th May, from the Mauritius, say the reported loss of this ship is not correct, for we learn by a vessel just arrived from Seychelles, that the captain had been killed by a whale. The Griffin has gone in search of the Princess Mary, with a view to afford such assistance as she may stand in need of.—June 6, The Thetis, arrived here from Bengal, experienced bad weather, and was obliged to throw 700 bags of rice overboard. She came in, making three feet water per hour.

Hebe.—The crew of this vessel and 123 passengers were providentially saved, and arrived at Sydney on the 20th July.

Fourteen schooners have been lost on the north coast of Newfoundland.

Hope.—From London for Quebec, ran on shore on the south-east end of Flint Island, about 8 o'clock on the morning of Wednesday the 22d of May, having on board 95 passengers, who were all safely got on shore by a hawser extended from the bowsprit, in a large tub attached to it. The vessel is a total wreck. Mr. Hector, a gentleman of property from Aberbeen, and his sons and daughters, with their families, were cabin passengers. They arrived at Montreal on the 27th of June, along with some of the other passengers. Some of the passengers had gone to New York from Cape Breton. Mr. Hector is stated to have lost property to a great amount.—*Montreal paper.*

Eagle.—This vessel was abandoned by the crew while on fire, who, after being in their boat two days and nights, were picked up. The hull of the vessel was afterwards washed on shore on one of the Grenadine Islands.

Laburnum.—Abandoned at sea, having eleven feet water in her hold. She sunk a quarter of an hour afterwards. Master and crew arrived 22d May at Sierra Leone.

Platoff.—Sunk at her anchors.

Wilna.—A schooner. Her hull washed on the beach at Scarborough on 31st Aug.

Three large vessels were passed in the North Sea, dismasted, the sea making a free passage over them. Another was seen on her beam-ends 1st September.

A vessel, bottom up, was passed by the Monarch steamer about six leagues from the land, 1st Sept. Another, full of water, with "Perceval, of Burlington," on the stern, was fallen in with by a Hull pilot-boat off the Spurn, on 1st Sept.

Juno.—The crew of this vessel was saved by the James Watt steamer.

Fortitude.—Of Newcastle, was seen bottom up off the Spurn on the 10th Sept.

Loyal Standard.—Part of this vessel's stern driven on shore with wreck.

Dorothy.—Sprung a leak at sea in 20° S, and 20° W. and went down 24 hours afterwards. The master and crew picked up, after being twenty days in the boats, by the Charles Adams, American ship, and landed at Pernambuco. Great praise is due to Captain Garnock and the crew, on this fearful occasion. The boats ran 1,311 miles from where the ship went down.

United Kingdom.—(From a correspondent.)—On the 15th Sept. a little before four o'clock, the United Kingdom, of 410 tons, Captain Friend, from Jamaica, laden with rum, sugar, and coffee, whilst lying at anchor in the River Thames, at Northfleet, was run down by the Queen of Scotland steam-vessel, on her outward passage, and the crew of the United Kingdom were with difficulty saved, as the ship instantly became in a sinking state, there being barely time, with the utmost promptitude, to run her ashore. On the return of the flood-tide she capsized and heeled outwards, nearly swamping the barges and boats which had gone to her assistance. It then became necessary to cut away her masts, and means were taken by Mr. Prescott, the pilot, to secure her on the Essex shore; but on the 16th, about four o'clock, at the first fall of the ebb-tide, she tore away and drifted down the centre of the river, with every probability of doing great damage to the craft at anchor below the town of Gravesend. Great efforts were therefore made to get her on the Kent shore, but all exertions were unavailing until she had drifted abreast of the new pier there, to which she was happily made fast, and now lies within a few fathoms of it. The Mayor immediately put himself in communication with the persons in charge of the wreck, and rendered every assistance, and he has ordered a steam-boat to be in readiness to afford the necessary aid on the return of the tide, when another attempt will be made to place her in safety. It is to be lamented that so sudden was the shock of the steam-boat, that the ship filled with water, and her valuable cargo therefore suffered very materially, and, but for the timely means of security at the Pier, the unmanageable wreck must have occasioned great additional calamity. The owners are Messrs. Fletcher and Co.

Births.

On the 15th Sept., at Wickham, near Canterbury, the lady of Commander J. H. Boteler, of a daughter.

At Cromer, Norfolk, the lady of Lieut. G. Westbrook, of the Coast Guard, of a daughter.

At Ryde, Isle of Wight, the lady of Capt. Harrington, R.N., of a son.

At Rose Cottage, Hambledon, the lady of Capt. Frank Douglas, R.N., of a daughter.

On board the Benbow, in Portsmouth Ordinary, the Lady of Lieut. W. Sturges, of a son.

Lately, at Weymouth, the lady of Captain W. Price Hamilton, of H.M.S. Comus, of a daughter.

On the 19th Sept. at Falmouth, the lady of Lieut. Wright, Com. of Hermes steam-packet, of a daughter.

Marriages.

At Greystoke, Cumberland, Captain Washington, R.N., to Eleonora, youngest daughter of the Rev. H. Askew, rector of Greystoke.

At St. George's, Hanover-square, Captain Kenlon Somerville, R.N., brother of Lord Somerville, to Frances Louisa, only daughter of John Hayman, Esq.

At St. George's, Hanover-square, Captain Parker Duckworth Bingham, R.N., to Emily, eldest daughter of Major George Payne, of Weybridge.

At Sherbourne, Warwickshire, by the Rev. John Boudler, Vicar of St. Mary's, Warwick, Capt. F. W. Rooke, R.N., to Harriet, fifth daughter of the late N. Hyde, Esq., of Ardwick, Lancashire.

On the 19th Sept. at Edmonton Church, by the Rev. J. Palmer, Captain Deare, R.N., to Margaret, second daughter of the late Robert Mushet, Esq., of the Royal Mint.

At St. George's, Hanover-square, London, Captain C. H. Williams, R.N. to Harriet, daughter of the late Sir Nelson Rycroft, Bart.

On Tuesday, the 27th Sept., at Brighton, by the Rev. H. M. Wagner, the vicar, Lieut. Henry James, R.N., to Mary, the eldest daughter of Thomas Ridley, late of Charles-square, Hoxton, Esq., deceased.

Deaths.

On the 24th Sept. at Fareham, Commander Joseph Eastwood, R.N., after a long and severe illness.

On the 20th Sept. at the Naval Hospital, Stonehouse, much regretted by a numerous circle of relatives and friends, Mr. W. Wise, captain's clerk of his Majesty's ship Belvidera, only son of Mr. Wise, of the Dolphin Inn, Havant.

At Padstow, Mr. A. Rose, R.N., at the advanced age of 85.

A few days ago, at Milford, Com. Jacob James, R.N.

In Norfolk, Capt. Simpson, R.M.

On Wednesday last, at his residence, Tamar Terrace, in the 71st year of his age, George Mitchener, Esq., Purser, R.N. In his last illness he enjoyed the consolations of the religion he had for many years consistently professed; and died full of the blessed hope of a glorious immortality. Whilst their bereavement is deeply deplored by his afflicted family, his death will be sincerely lamented by an extensive circle of friends in public and private life, to whom he was endeared by the amiableness of his disposition, and the sterling excellencies of his character.

At his house, Lion-place, Portsea, Captain Thomas White, *(b)* R.N. (1810) aged 78, universally esteemed and respected. He was a Midshipman in Keppel's action, and also in Rodney's fleet at the capture of Don Juan Langara, and in the battle of the Nile he was first Lieutenant of the Audacious.

Lately, at Birmingham, Lieut. Allan Martin Williamson, R N. (1815) aged 38.

Lately, in Ireland, John Hutchinson, Master, R.N. (1806) aged 49.

On the 15th Sept., near Arundel, John Seward, Purser, R.N. (1796) aged 55.

In Trafalgar-street, Longport, aged 52, Mr. J. Macdonald, warder at the Dock-yard-gate, Portsmouth.

At Bishopwearmouth, Alexander Meldrum, Master, R.N. (1808).

In West-street, at the house of Dr. Mc. Carogher, Captain C. Ommaney, R.N., the brother of Admiral Ommaney, of Havant House.

On the 9th Sept., at St. Peter's, Guernsey, Lieutenant W. B. Bartlett.

Lieut. G. N. Wesley, R.N., and late agent for transports, on board the Sylvia, transport, on his voyage to Rio de Janeiro.

On the 7th Sept., at Lyme, Captain E. J. Moriarty, R.N. (1809.)

A few days since, at Barnstable, Lieut. Henry Gittings, aged 72.

Lately, at Lisbon, Mr. W. Savory, Purser, R.N.

At Broom, near Cullen, N.B., on the 28th of August, John Duncan, Esq., Surgeon, R.N.

At Fraserburgh, Commander James Milne, on the retired list.

At Godmanchester, Commander James Molineux, aged 74.

On the 29th Aug., at Cork, Pierce Power, Esq., *(a)*, Surgeon, R.N., of cholera, aged 56. His wife died the week previous, of the same disease, which severe dispensation of Providence has left two orphan children unprovided for.

August 22, in Bathwick-street, aged 33, Lieut. Thomas Brown Sandsbury, R.N., sincerely regretted by a numerous circle of friends.

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THE

NAUTICAL MAGAZINE,

&c.

NOVEMBER, 1833.

HYDROGRAPHY.

Note.—All bearings are Magnetic, unless otherwise stated.

71.—CURRENTS OF THE OCEAN.

The following bottle-papers afford some interesting facts relating to the currents of the ocean:—

(Coast of Nova Scotia.)

(1.) "His Majesty's troop-ship Romney, 13th May, 1833, lat. 42° 10′ N., long. 66° 25′ W., experienced little or no current during the last twenty-four hours. Wind S.W. with moderate breezes and thick foggy weather. Temperature of the air 50°, and of the water 38°.

"CHARLES BROWN, *Master commanding*."

In compliance with the request it contains, we find the following inserted on it:—

"Picked up on the shore of St. Mary's Bay, 6½ miles below the chapel, on the 12th June, 1833, by Joseph M. Como.

"N.B. About ten miles N.E. from Cape St. Mary."

(Gulf of Florida.)

(2.) "His Majesty's troop-ship Romney, 4th May, 1833, lat. 24° 46′ N., long. 80° 20′ W. Entrance of the great inlet, (East Florida,) N. 24° W. five leagues. Experienced a current during the last twenty-four hours, N. 45° E. twenty miles. Winds variable, N.E. to E. At this time the temperature of the water was 77°, and that of the air 75½°.

CHARLES BROWN, *Master commanding*.

(Atlantic—Bay of Biscay.)

From the Annales Maritimes.

(3.) On the 21st Feb. a bottle was found on the coast near Cape Feret, containing a paper, stating that it was thrown into the sea on the 17th of April, 1832, in lat. 46° 15′ N., long. 17° 58′ W. by chronometer.

(4.) On the 4th March following, another bottle was found on the coast of Jard.

The paper which it contained stated, that it had been thrown into the sea on the 12th April, 1832, in lat. 48° 30′ N. by observation, and long. 16° 56′ W. by chronometer.

These two bottles had been thrown overboard from the barque Mary, of London, from Otaheite to London, and the papers were signed "A. Lock, master."

(5.) On the 17th of April, a bottle was found on the coast of Dax, with a paper inclosed, containing the following:—

"Barque Enterprize, from Jamaica to London, June 5th, 1832, lat. 45° 5′ N., long. 24° 20′ W. All well. We have spoken the brig Alchemist, of Dublin, with emigrants to Quebec. Out seventeen days. All well on board of her."

(Equatorial Current—Atlantic.)

(6.) On the 19th May, 1829, a bottle was found on the shore at West Caicos, in lat. 21° 40′, and long. 72° 30′, which contained a note in which the following was written:—

"March 8th, 1828, on board the Countess Dunmore, from London to Tobago, in lat. 27° and long. 28° W. This bottle was thrown overboard to ascertain the set of the current. Whoever picks it up will oblige by advertising it in the newspapers.

"John H. Robertson, *Commander.*

"We have had nothing but gales of wind for these last eight days past, from the south to the south-west. All well on board. "J. H. R."

July 22.

(7.) On the 28th of November, 1826, a bottle was found on the coast of Cuba, thirty leagues to leeward of Baracoa, in about lat. 22° N., and long. 76° W., which contained a paper on which the following was written:—

"This bottle was thrown overboard from the Hamburgh merchant-ship Kate, Captain Felix-Fisher Creswell, on her passage from London to Buenos-Ayres, in latitude 24° N. and long. 19° W., the 27th day of June, 1825. Any person finding this bottle is requested to give public notice of the time when, and of the place where, it was found.

"N.B. Left Plymouth the 8th of June, 1825.

"F. F. Creswell, Master,
The Rev. J. Armstrong,
Mr. Syfret,
"Mrs. Syfret,
Mr. T. Williams, and
Ten other persons."

Bahama Royal Gazette, Dec. 26, 1828.

From the foregoing, we obtain the following direct courses and distances, nearly:—

(1.) N. 63° E. about 615 miles: period 30 days = about 20′,5 per day.
(2.) Western edge of the Gulf Stream.
(3.) S. 83° E. about 710 miles: period 310 days = about 2′,3 per day.
(4.) S. 79° E. about 630 miles: period 326 days = about 2′,0 per day.
(5.) S. 84° E. about 950 miles: period 316 days = about 3′,0 per day.
(6.) S. 83° W. about 2200 miles: period 406 days = about 6′,2 per day.
(7.) S. 87° W. about 3100 miles: period 499 days = about 6′,2 per day.

(1.) Cape St. Mary could be no other than that on the south coast of Newfoundland. It is evident that, by the temperature of the water, which was very judiciously observed by Mr. Brown, that the bottle was not in the gulf water; and, as there was little or no current at the time, the S.W. wind which was then blowing may have had a considerable effect afterwards in drifting the bottle on its course. It does not appear likely that it deviated much from this course, as it lies nearly parallel to the coast of Nova Scotia.

But there is little known yet concerning the currents on this coast, as to their period, velocity, or duration. It was, no doubt, such a current as this that was fatal to H.M.S. Atalante, in 1813, and from the effects of which H.M.S. Tyne had lately a narrow escape. Mr. Brown has conferred a signal service on this branch of hydrography, and we yet hope that other persons will follow his example, particularly in that part of the world where the danger of currents is so much increased by fogs, icebergs, and gales of wind.

(2.) The drift of this bottle has been along the western edge of the Gulf Stream. It was picked up thirty miles north of Cape Florida Light, Key Biscaino, on May 29th, in lat. 26° 20′ N., long. 80° 5′ W. The progress of it was 110 miles in twenty-four days.

(3, 4, 5.) These three papers afford a good illustration of what has long since been shewn by the late Major Rennell, namely, that "the waters of the Atlantic Ocean flow into the Bay of Biscay, along the north coast of Spain." But they were thrown into the sea in favourable positions for shewing how far that "flow" commenced to the westward, which has been a desideratum, and we will leave them for the consideration of our readers, with the following conclusions suggested by them:—A tendency of the Atlantic waters to flow towards the Bay of Biscay, *within its parallels*, nearly half-way across to the Banks of Newfoundland. The velocity of the flow increases towards the southern parallel of the Bay, and is greatest at no considerable distance from the north coast of Spain. The bottles, 3 and 4, may have been set to the southward, and, reaching the angle of the bay, have, most probably, been set to the northward by the same kind of current* experienced by Captain W. King, R.N., while the bottle 5 accelerated in its course from being near the coast of Spain, was not within the influence of the northern set.

(6, 7) Have traversed the Atlantic, with the equatorial current north of the line, at exactly opposite periods of the year. Considering this, and the distance that one has gone being so much more than the other, they afford a remarkable illustration of the uniform effects of that current.

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* See note 2 in page 320 of Rennell's Currents of the Ocean.

72.—Remarks on the Whittle Rock, *by Mr. C. P. Bellamy, late Master of H.M.S. Maidstone.*

The Trident Rock, commonly called the Whittle, is about twenty feet long, and ten broad : on the southern and shoalest part there is only ten feet water; the lead dropping from this depth into ten fathoms, the north part slopes more gradually into seven and eight fathoms. The extent of the rocky shoal surrounding the Whittle may be called a quarter of a mile in diameter. Within a cable's length of the Whittle there are several other rocks, with from four to six fathoms, and with ten and fifteen fathoms between them. The marks for the shoalest part of the Whittle are as follow :—On the peninsula between Cape Point and Paul's Berg, two marks are erected, the upper one is painted black, which stands on the summit of the hill, and can be seen by ships from the westward before they round the Cape. The lower one is painted white, and stands on the declivity of the hill, about a quarter of a mile N.N.E. from the landing-place in Buffalo Bay, and may be seen by vessels after they have rounded the Cape Point. These marks bear from each other N. 78° E. and S. 78° W. (by compass,) distance 1700 yards. These obelisks are formed by an upright spar, supported by shores, and guys. The upper part, or mark, is frame-work, filled in with thin board, presenting a flat surface, ten feet wide at top, and fourteen feet at the bottom, and twelve feet deep. The upper mark is twenty-three feet above the ground, the lower one twenty-eight feet. There are two other very conspicuous marks near and above Simon's Town. The summit of a hill to the N.W. of Simon's Town is whitewashed, and a large rock at the back of the commandant's house is also whitewashed, and bear from each other N. 42° W. and S. 42° E., by compass. These four marks, in a line of meeting, lead over the dangerous part of the Whittle. Besides these marks, there are several others very conspicuous; but the above mentioned are all that are required. By keeping either of these marks open a sail's breadth, the shoal will be cleared either way. When the white mark on the hill to the N.W. of Simon's Town is shut in with the S.W. land of Simon's Town, you may be certain of being to the westward, and clear of the Whittle.

A remarkable high peak at the S.W. part of Hout's Bay, just open to the eastward of Elsey Peak, bearing N. 20° W. A round hummock on the east side of False Bay, just open to the southward of a remarkable sharp-peaked hill, bearing S. 45° E., are also excellent marks for this rock. Near the shoalest rock is placed a beacon, with a flag on it; but this frequently breaks adrift, it being very difficult to keep a beacon on it, almost every sort of experiment having been tried. In fine weather there is generally a number of seals playing about the ten-feet rock, a most excellent mark for it.

Bearings from the Whittle.

		°	′		
Cape Point..............	S.	51	30	W.	
Paul's Berg..............	S.	88	0	W.	
Noah's Ark	N.	35	0	W.	Compass Bearings.
Elsey Peak	N.	20	0	W.	
Musenberg Point	N.	3	0	W.	Variation, 28° West.
Seal Island	N	34	0	E.	in 1829.
Hanglip Peak............	S.	33	30	E.	

73.—REMARKS ON PASSING THROUGH THE BOCAS OF TRINIDAD, *by Commander G. Daniell, of H.M.S. Victor.*

Endeavour to make the land six or seven miles to windward or eastward of the Bocas, as, in the event of its falling light winds or calm, you have good anchorage at one mile and a half off shore; and if you should be swept to leeward of them, you must work up to the northward of Grenada, before you can fetch them again. The western, or Boca Monos, is intricate; nor is there any advantage to be gained by making it; for entering the Gulf of Paria, the second, or Boca Huevos, is generally used; and the third, or Boca Navios, for going out. If the wind should not be to the northward of E.N.E. you ought to run on to the Boca Grande; if it is, you will find, as you approach the Boca Huevos, that it draws round to the northward; and, if blowing a six-knot breeze, you may enter at any time of tide with safety. If the wind is light, you cannot accomplish the passage with the ebb-tide; but with the flood the current is nearly neutralized, and it may then be attempted with safety. From the masthead you may see whether the breeze runs through. You must keep on the starboard hand going in, to avoid the eddies which run under the high cliffs of Monos; and, also, because the wind is fresher on the Huevos side. When nearly through, the studding-sails ought to be taken in in time, and every thing ready for bracing up on the larboard-tack, as the wind generally blows pretty fresh from the eastward, in the gulf; and if taken aback, you may be driven back through the Boca before you can get the sails trimmed.

The time of high-water at Port d'Espagne at full and change, is 5 h. 20 m.

At the Boca Monos, 36 minutes, } earlier.
—— Boca Huevos, 40 ——
—— Boca Navios, 46 ——

The third, or Boca Navios, is the best to go out through; it trends to the S.E. and N.W., and the gulf wind generally draws through it, from the southward, until you get the easterly breeze outside. At all events, the current takes you out with sufficient rapidity.

The Boca Grandé is clear, with the exception of a sunken rock which lies within half a mile of the S.W. point of Chaca-chacare. In the description of the Bocas in the West India Directory, it says that the island of Huevos is in one; which is an error, as it is divided by a small channel, and is so represented in the old Spanish charts.

Longitudes by means of Observations—Norton 537, *Mudge* 3.

Names.	Longitude.			Mer. Distance.		
	°	′	″	h.	m.	s.
Havanah Arsenal......	82	22	15	1	9	52
Bermuda Dock-yard ...	64	54	20			
Grenada, St. George's ..	61	48	30	0	12	23
Tobago, Great Courland	60	51	15	0	3	49
Trinidad, Port d'Espagne	61	32	35	0	2	37

74.—BRIGHTON CHAIN PIER.

"*Trinity-House, London,* 17*th October,* 1833.

"Information having been this day received, that the Chain Pier at Brighton was so seriously injured by lightning, on the evening of the 15th instant, as to render it impracticable to exhibit the customary light at the Pier Head, notice thereof is hereby given, and masters of vessels, pilots, and other persons, are cautioned not to approach the shore in less than 4 fathoms at low-water, when navigating off the town of Brighton.

"By Order, "J. HERBERT, Secretary."

TIDE-TABLE FOR NOVEMBER, 1833.

Mean Time.

Week D.	Month D.	PLYMOUTH *Dock Yard.*				PORTSMH. *Dock Yard.*				SHEERNESS *Dock Yard*				LONDON *Bridge.*				ABERDEEN.				LEITH.				Month D.	D. Age at Noon
		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.		Morn		Aft.			
		h.	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*	*h.*	*m.*		
F.	1	7	28	7	46	1	20	1	39	2	33	2	53	3	49	4	7	2	58	3	19	4	33	4	54	1	19·2
Sat.	2	8	6	8	26	2	0	2	21	3	14	3	37	4	25	4	43	3	40	4	3	5	15	5	38	2	20·2
S.	3	8	48	9	10	2	44	3	10	4	1	4	24	5	7	5	30	4	28	4	54	6	3	6	29	3	21·2
M.	4	9	36	10	3	3	36	4	4	4	50	5	16	5	53	6	21	5	24	5	57	6	59	7	32	4	22·2
Tu.	5	10	35	11	12	4	35	5	11	5	46	6	23	6	54	7	34	6	34	7	14	8	9	8	49	5	LQ
W.	6	11	54	....		5	51	6	33	6	59	7	40	8	27	9	18	7	56	8	39	9	31	10	14	6	24·2
Th.	7	0	42	1	23	7	14	7	50	8	22	9	7	10	4	10	42	9	19	9	53	10	54	11	28	7	25·2
F.	8	2	2	2	37	8	26	8	59	9	44	10	17	11	20	11	49	10	24	10	51	11	59	....		8	26·2
Sat.	9	3	10	3	40	9	28	9	54	10	46	11	10	....		0	15	11	17	11	40	0	26	0	52	9	27·2
Su.	10	4	5	4	29	10	16	10	39	11	33	11	56	0	37	1	1	....		0	2	1	15	1	37	10	28·2
M.	11	4	51	5	13	11	0	11	21	....		0	19	1	23	1	45	0	24	0	46	1	59	2	21	11	N M
Tu.	12	5	35	5	57	11	42	....		0	41	1	3	2	3	2	21	1	7	1	27	2	42	3	2	12	0·8
W.	13	6	19	6	38	0	3	0	25	1	23	1	42	2	40	2	59	1	48	2	8	3	23	3	43	13	1·8
Th.	14	6	58	7	17	0	45	1	7	2	3	2	22	3	16	3	34	2	28	2	48	4	3	4	23	14	2·8
F.	15	7	36	7	54	1	27	1	47	2	41	3	1	3	52	4	10	3	9	3	27	4	44	5	2	15	3·8
Sat.	16	8	14	8	33	2	8	2	30	3	23	3	45	4	31	4	52	3	46	4	6	5	21	5	41	16	4·8
Su.	17	8	52	9	12	2	52	3	15	4	5	4	25	5	15	5	39	4	27	4	50	6	2	6	25	17	5·8
M.	18	9	34	9	55	3	37	4	1	4	47	5	9	6	1	6	27	5	14	5	39	6	49	7	14	18	6·8
Tu.	19	10	19	10	47	4	26	4	53	5	31	5	57	6	55	7	26	6	7	6	38	7	42	8	13	19	FQ
W.	20	11	15	11	48	5	23	5	54	6	25	6	52	8	3	8	45	7	13	7	49	8	48	9	24	20	8·8
Th.	21	....		0	25	6	27	6	59	7	25	7	58	9	29	10	6	8	27	9	2	10	2	10	37	21	9·8
F.	22	1	1	1	32	7	29	7	57	8	31	9	7	10	37	11	9	9	36	10	3	11	11	11	38	22	10·8
Sat.	23	2	2	2	31	8	26	8	53	9	37	10	6	11	38	....		10	29	10	53	....		0	4	23	11·8
S.	24	3	0	3	25	9	18	9	40	10	31	10	54	0	6	0	24	11	18	11	36	0	28	0	53	24	12·8
M.	25	3	48	4	10	10	1	10	21	11	15	11	35	0	40	0	57	11	55	....		1	11	1	30	25	13·8
Tu.	26	4	31	4	52	10	41	11	1	11	57	....		1	15	1	30	0	13	0	31	1	48	2	6	26	14·8
W.	27	5	12	5	34	11	21	11	41	0	18	0	40	1	42	1	59	0	48	1	7	2	23	2	42	27	Ful
Th.	28	5	56	6	17	....		0	2	1	2	1	22	2	17	2	34	1	27	1	47	3	2	3	22	28	16·8
F.	29	6	37	6	58	0	23	0	45	1	42	2	3	2	53	3	12	2	8	2	28	3	43	4	3	29	17·8
Sat.	30	7	18	7	37	1	7	1	28	2	23	2	43	3	33	3	53	2	49	3	11	4	24	4	46	30	18·8

The times of high-water, nearly, at other places on the coast, may be found with the assistance of the above table within certain limits. Thus, the times in the Plymouth-Dock column are to be used for all places between the Land's End and Lyme Cob; and those in the Portsmouth column, for all places between Portland Bill and Beachy Head; by adding or subtracting the time opposite each place, according to the sign + or −.

The times of high-water at Plymouth Dock-Yard are to be used with the difference against the following places, to find the time of high-water there on the same day:—

	h. m.		*h. m.*
Mounts Bay and Lizard	− 1 3	Eddystone	− 0 18
Falmouth Harbour	− 0 18	Dartmouth and Torbay	+ 0 27
Fowey Harbour	− 0 18	Exmouth	+ 0 52
Cawsand Bay	− 0 10	Lyme Cob	+ 0 27

The times of high-water at Portsmouth Dock-Yard are to be used as above, for the following places:—

	h. m.		*h. m.*
Portland Bill	− 6 10	Cowes	− 0 55
Weymouth Harbour	− 5 10	Southampton	− 1 0
Christchurch and Poole Harbours	− 2 50	Bembridge Point	− 0 40
Needles Point	− 1 55	Selsea and Arundel Harbours	+ 0 5
Hurst Chamber	− 1 40	Shoreham Harbour	− 0 25
Lymington	− 1 25	Beachy Head	− 1 25

VOYAGES AND MARITIME PAPERS.

I.—Obelisk of Luxor.

In 1828, Mehemed Ali, at the request of the late M. Chompollion and the consul-general, presented the French Government with three of the most interesting monuments of his country, namely, one of the obelisks of Lower Egypt, familiar to all as Cleopatra's needles, and two others standing before the entrance of the great temple at Luxor, in Upper Egypt. On his return to Paris, M. Champollion had several communications with the government respecting the most approved method of transporting one or all of them from Africa to Europe. Having decided that the attempt should be made on one of those at Luxor, two plans were suggested; the first, proposed by a committee of French naval officers at Alexandria, was, that, by means of a raft, it should be floated down the Nile, and from thence towed through the Mediterranean, either by steam or sailing vessels. This proposal, on being submitted to a special committee at Paris, was rejected, and a second offered and adopted, viz., to build a vessel on purpose. Instructions were accordingly forwarded to Toulon, and, in August, 1830, the Louqsor[*] was completed, a vessel in length somewhat less than 140 feet, and about 26½ in breadth. To reduce her draught of water to six feet, which it was calculated she would draw with the obelisk in her hold, her bottom was made nearly flat, and strengthened by five keels, corresponding in the interior with a similar number of Kelsons. Her officers consisted of Mr. de Verninac de Saint Maur, Lieutenant commandant; Mr. de Joannis, second in command; with three other Lieutenants, Mr. Le Vavasseur, Mr. Blanc, and Mr. Jaurès; Mr. Angelin, Surgeon; Mr. Silvestre, Purser. In addition to these, Mr. Le Bas, engineer, from the Polytechnic School, was ordered to superintend the removal and embarkation of the obelisk. Being ready for sea, she sailed from Toulon, April 15, 1831, for Alexandria, where she arrived after a passage of 18 days. The remainder of the month of May, together with the first fortnight of June, were devoted to the removal of stores, in djermes, or boats of the country, which were despatched to Rosetta on the 14th of June. On the 17th, the Louqsor herself, now considerably lightened, was taken in tow by a brig, and, on the morning of the 18th, succeeded in passing the bar of Rosetta, not, however, without touching several times. Mr. Le Bas had, in the mean while, lost no time in transhipping the stores, &c. from the djermes to a certain number of river-boats called Agabas; and then, finding, notwithstanding the removal of so much weighty ballast, that the Louqsor must still be detained some time longer at Rosetta, for want of water, proceeded without further delay, with a body of workmen, and twelve sailors, under the command of Lieut. Jaurès, for the purpose of excavating a canal or basin, for the reception of the vessel at Luxor, which he hoped to accomplish before the rising waters of the Nile, although favourable for her ascent, would, of course, materially interfere with such an operation.

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[*] In speaking of the vessel, the French orthography will be followed; but, as the name is, by ancient and modern authorities, usually (we believe invariably) written Luxor, in speaking of the place we shall adopt the latter orthography.

At Cairo, they were cordially received by Babel Effendi, the governor, who strengthened their party with four Cawas or Janizaries of the Pacha, with orders to afford them every assistance in their further progress up the river. On the 11th of July, the flotilla reached Luxor, and immediately proceeded to business, by clearing the obelisks from sand and rubbish, levelling the adjacent ground, and, with the united labour of 300 hired Arabs, digging a channel from the river to the nearest accessible point for embarking the obelisk, on the western side of the entrance into the temple; which was selected for removal, not only on account of its greater proximity to the river, but as being the most perfect, though a few inches inferior to the other in height.

While they were thus engaged, the Louqsor, availing herself of the gradually rising waters, ascended the river, and, arriving at Cairo on the 17th July, changed pilots, and proceeded on the 19th. On the 25th July she reached Siout, the capital of Upper Egypt, where she was visited by Scherif Bey, minister of the Pacha, and, on the 15th August, attained her final destination; and, in the course of the day, entering the canal already completed, was safely moored, and housed over, to guard her from the weather. From Siout to this point, the labours of her officers and crew were incessant and severe. So strong was the descending current, that, notwithstanding every exertion, they were three days in advancing a mile and a half, and this under the intolerable heat of from 140 to 160 degrees of Fahrenheit. It may appear to some that there must be a little inaccuracy in this statement, on the supposition that the human frame could scarcely exist under such a fearful elevation of temperature: we are therefore glad to have it in our power to corroborate the testimony of the French officers, by comparing it with that of Mr. Legh, whose travels are now before us; and, singularly enough, in speaking of the temperature of nearly the same spot, when he visited it, he mentions the rise of his thermometer to be precisely the same, viz. 160 degrees. In the prosecution of this tedious and painful task, their boats and tackling of every sort were so worn out, that, when they came to their moorings, only one boat remained in a state fit for service, with only two hawsers, on which little dependence could be placed.

For their further permanent accommodation, the southern side of the temple was cleared, and a house enlarged, in which the whole party now assembled were commodiously lodged. In order to effect their object, it was found necessary to remove two mounds of sand and rubbish, as well as several houses, in the line of an intended inclined plane, a preliminary step which fully employed 300 men for three months; in the midst of which fatiguing operation, the cholera broke out in the country, committing frightful ravages amongst the natives, but, fortunately, attacking only two sailors of the expedition, both of whom were saved by the unremitting attention of Mr. Angelin, the surgeon.

We now come to the most interesting part of the narrative, the abasement from its pedestal, and actual removal of this enormous block of granite, which had for some thirty centuries or so stood sentinel before the gate of this vast and mysterious temple.

Without the aid of those models, which Mr. de Joannis very obligingly shewed to us on board the vessel at Cherburg, it would not be easy to explain every part of the process in minute detail; but a general outline will convey a tolerable idea of the *modus operandi*. Round its summit a double set of tackles were made fast, connected with anchors firmly imbedded, and secured at proper distances on either side, the purchases running round capstans capable of affording an almost unlimited power. These tackles operated in opposite directions, those on one side dragging the column downwards from its pedestal; the other, by being kept tight, checking its increasing gravitation, as the angle of its inclination decreased. Other subordinate measures of precaution were adopted, to prevent the possibility of its sustaining injury, or breaking by its own weight. It had been previously lined or cased in part, and the side which was to rest on the plane was fortified with a corresponding frame. A sort of rampart, or strong ledge, was also so placed as to meet the weight of its descent: thus removing the whole weight of pressure from the lower extremity. When lowered, it rested on three or four moveable slides, on which it was to be dragged down the inclined plane. The length of these slides was so proportioned to the length of the column, that, when it had moved to the extremity of the one in front, the hindmost was left entirely free, and was thus easily transferrible to take its place in front, leaving, as the column advanced, that which immediately preceded it in the rear, at liberty. The actual process of lowering it was performed in the short space of twenty-five minutes from the moment of manning the purchases to that of its resting on the slide, in the presence of the governor of the province, and some English travellers.

Although the great object had thus been successfully accomplished, much yet remained to be done. Twenty-five more days were occupied in propelling it towards the vessel, whose bows having been sawn off, and removed, now assumed the appearance of a tunnel of wood-work, in a line with the inclined plane, just fitted to receive this enormous wedge, into which it was to be fitted like a sword in a sheath. The last act of sliding it into, and securing it in, the hold of the vessel, was performed in two hours. By the falling of the waters of the river, she was left, as it were, in a commodious dry dock, and the carpenters had no difficulty in reuniting the forepart to the hull, and rendering the vessel strong and sea-worthy as she was before.

On the 1st of August, 1832, the first ripple of the rising inundation wetted her stern-post; and, on the 19th, the Louqsor once more floated, and was ready to commence her voyage downwards towards Rosetta. But a certain number of boats which she required, and which had been for upwards of two months at Alexandria, had been unaccountably delayed; and, after waiting eight days, Mr. de Verninac determined to move without them, notwithstanding the additional risk incurred, if the vessel grounded without having them at hand. Fortunately, on the second day after her departure, they were met near Gamoulé, and the Louqsor reached Cairo, without accident, on the 23d September, where she remained two days, taking in biscuit, and changing her pilots. On arriving at Rosetta on the 1st October, the bar, which for several days had been traversable, suddenly sanded up, and became impassable: this was the more vexatious, as, had it not been for the unavoidable delay above mentioned, they might have got out, and not lost three months at anchor, close within the bar, constantly sounding, in hopes of finding an opening channel, and then being at last compelled to fall back into the harbour, where they remained for another fortnight, anxiously waiting for camels, or flat buoyant boats, by which they hoped to float the vessel over the shoals. At the expiration of this fortnight, however, their anxiety was relieved by a gale of wind, which, blowing up the bar, opened a passage, and released them from imprisonment. In two days she was ready for passing the bar, and, on the 1st January, 1833, succeeded in doing so, after five hours lost by grounding on one or other of its innumerable banks. When once more in deep water, the Louqsor was welcomed by the Sphinx, Captain Sailat, awaiting her approach, which vessel immediately took her in tow. On the following day, both were safe in the harbour of Alexandria, where they passed the remainder of the winter; and, on the 1st April, getting under way, proceeded homewards.

By contrary winds the vessels were forced into Rhodes; from thence they sailed to Marmorice Bay, Milo, Navarino, Zante, (where they took in coals for the Sphinx.) From Zante to Corfu, for a further supply of coals; from Corfu to Toulon, which they reached on the 10th May, and remained in quarantine twenty days, leaving that port June 20. Reaching Gibraltar on the 29th, where they took in coals; and, touching at Lagos and Corunna, they were detained at the latter place by contrary winds till the 5th of August, when they again sailed; and arrived at Cherburg on the 12th Aug. where, on the evening of that day, they were safely moored in the great basin of the arsenal. In fine weather, the rate of towage by the Sphinx was about five knots and a half per hour. As a just tribute to the character of (we believe) Messrs. Fawcet, of Liverpool, who manufactured the entire machinery of that fine vessel, the Sphinx, it is gratifying to state, on the authority of Capt. Sailat, that, from the time of her first going to sea, shortly before the expedition to Algiers, to the present moment, during which period she has been in much active service, and exposed to every variety of weather, not a single joint or screw, as he assured us, has ever been out of order. And it is but equally due to Captain Sailat to add, that we never saw steam machinery in better order; the whole, with the exception of the first year, having been entirely under the superintendence of French engineers.

The Louqsor is ship rigged, with little to attract observation when seen afloat, broadside on; her masts are slight, and as the obelisk fills up the entire space between the fore and mizen masts; the mainmast is stepped upon a false bed, just above the centre of the column, and consequently requires additional security: besides shrouds, it is therefore supported by strong spars abutting on the bulwarks, and reaching about two-thirds up the mast.

The vessel again put to sea on the 12th Sept. and arrived at Havre early in the morning of the 13th, when the Sphinx committed the Louqsor to the charge of a couple of Seine steamers; and, from the pier of Honfleur, we saw her gliding up the stream on her way to Rouen, where, we understood, she would be compelled to remain till there was water enough in the river to float her hull to Paris. On arriving at the capital, she is to be once more completely rigged, and the same pendant which was displayed at Luxor is to wave within sight of the Thuilleries, while the column is to be once more reared on a granite pedestal preparing for it in the place de la Concorde; and Mr. le Bas, and the officers who removed it from its ancient site, are to have the honour of superintending its erection in the capital of France.

We cannot close our narrative without a few observations on a subject highly interesting, not only to every lover of science, who, we feel assured, will, with the majority of our readers, readily award his mite of approbation for the persevering exertions of those who have so creditably accomplished this arduous task, but, to those amongst our countrymen who may lament that no measures were ever taken by Government, where favourable opportunities occurred, for transporting to our own shores some similar monument from a land so intimately connected with the gallant achievements of British arms. To such as in their ignorance deemed the removal of these monolithite columns impracticable, the success of the

French expedition is a receipt in full of all demands. But, that all were neither ignorant nor apathetic, we know, beyond a doubt, from the enthusiasm excited in 1801, when, on a favourable report being made by our engineers, estimating the expense of bringing home one of Cleopatra's needles at £1500, a subscription was eagerly entered into by the army and navy, however ill paid are the officers of both those noble services; and a vessel that Menou had sunk in the old port of Alexandria was raised with the first-fruits of this fund, and prepared for its reception. Under the superintendence of Lord Cavan, the work went on rapidly; the obelisk was turned, and moved, by means of machinery, towards the vessel; and Captain Stephens, of the navy, who was present on the occasion, was despatched to this country, with plans proposed for the conveyance of this splendid trophy of the success of our victories; and there is every reason to believe the design would have been accomplished, when the enterprise was unexpectedly crushed by the commander-in-chief in the Mediterranean declining to sanction and patronize the measure; at the same time issuing an order preventing the sailors from assisting at the work. How far the present government would exert itself, were another proposal made, is of course beyond our knowledge; but there is too much reason to fear, that, with every leaning on their part in favour of such an undertaking, their own praiseworthy intentions would be checked by the chilling influence of that narrow-minded portion of the community, the main-springs of whose souls are founded upon pounds shillings and pence, by which scale alone they would estimate the honour and glory of the united kingdom, binding down with pecuniary fetters those who look to her exaltation through a nobler and more liberal medium.

For the private meditations of those who may still be inclined to cast a patronising glance upon what might be done, from what has been done, we shall conclude our remarks with the comparative dimensions of Cleopatra's needle, and the Obelisk from Luxor; the latter converted into English measurement from the data afforded by the French authorities.

		Feet.	Inches.
Cleopatra's Needle—extreme length		68	3
Ditto	average width at the base,	7	3
Ditto	average width at the narrow end	5	0
Obelisk of Luxor—extreme length about		76	0
Ditto	width at base, rather more than	7	0
Ditto	width at the narrow end	4	0

Weight, about 250 tons.

E. S. Y.

II.—On the Centre of Rotation. *By Commander John Pearse, R.N.*

(Continued from page 577.)

The centre of longitudinal vibrations of a ship is determined and governed by the same laws as the axis of rotation in rolling, or lateral inclination. It is the longitudinal *metacentre*, or *point of stability*, and is situated at a very considerable height above the centre of gravity of the ship. Consequently, the stability, or resistance to inclination, in this way is much greater than literally, and which is the cause of the great disparity between longitudinal and lateral inclination. Its great height is of no consequence, or no proof against its being the centre of rotation, or of its not being as a fixed or stationary point, as the actual point of support is below it in the same vertical. And, consistently with the laws of mechanics, the *actual point of support*, or *the part of the body which is in contact with that which supports it*, may be situated *below* both the *centre of gravity* and the *axis of rotation;* but the centre of gravity of the body *must* necessarily be situated below the axis of rotation, or it can neither possess *stability* nor the *property of vibrating.*

That eminent philosopher, M. Bouguer, in speaking of what he calls the point *velique*, and which is in fact the point where the centre of effort of the sails should be situated with regard to height, tells us, that, "if the direction of the centre of effort of the wind is *above* or *below* this point, it will cause the ship to *incline* either by the *head* or by the *stern*." And Chapman, on the same subject, says, "Hence we see of what consequence it is to have this centre at the proper height, when the ship sails with the wind aft, for if it is situated *above* or *below*, a greater quantity of sail would not increase the sailing proportionally to the surface, because *one or other* of the *extremities* of the ship would be *depressed*, by which the resistance would be increased." The arguments of those eminent men tend strongly to prove that there is a point situated very high, which may be considered as fixed or stationary. They consider, that if the centre of effort is at a proper height, no motion proceeds from it, but, that if the centre of effort of the wind on the sails is situated above or below, one or other of the extremities would be depressed. This principle strictly agrees with the laws which revolving or vibrating bodies follow, namely: If an effort acts in a direction perpendicular to the axis of rotation, no motion proceeds from it, but if the direction of the effort is on either side of the axis, then it produces revolving or vibrating motion.

There can be but one fixed or stationary point in a body which revolves or vibrates, and which is the axis of rotation; and, agreeable to the laws of mechanics, the length of the lever to which a power is applied is measured from the axis of rotation, and in a direction *perpendicular* to that of the effort. We are told by the eminent authorities before named, that, if the direction of the centre of effort of the wind on the sails intersects a certain point, it does not alter the position of the ship, but, that when the direction of the effort is above or below, then one or other of the extremities will be depressed. Now, the cause of this is very evident, and the arguments of those authors tend to prove that this point is the axis of rotation. That which Bouguer calls the point *velique* is where the direction of the centre of effort of the wind intersects a diagonal line representing the resultant of the force of the water on the bow, and it is this effort of the water which he considers as opposed to any *alteration in the position of the ship* when the centre of effort of the wind is neither too high nor too low.

Chapman's method of finding the situation of this point differs from that used by Bouguer; but it must appear very evident, by the little which has been quoted from the works of those authors, that they had the same end in view, namely: To find a point where the direction of the effort of the wind should intersect the direction of the resultant of the water on the bow, without disturbing the equilibrium of the ship. The *power of the wind* acting so *very high* without producing *inclination*, is a proof that the point which its *centre of effort intersects* is as fixed; and it can only become so from being supported by the efforts of the water on the part immersed; and it is evident, also, that this point remains stationary when the centre of effort of the wind acts or intersects above or below it. The authorities before mentioned tell us, "That if the centre of effort is above, then the ship will incline towards the head. If, on the contrary, the centre of effort is below, the afterpart will be the farther immersed." The *power of the wind* in either of these cases acquires a *moment* or *relative force*, in consequence of being applied to *the arm of a lever, whose length is the distance of the centre* of *effort of the wind from the point velique*; and, consequently, this *moment or relative force is equal to the amount of the absolute force multiplied by the length of the lever to which it is applied. It is this relative force, which the power of the wind does not possess when its centre of effort is at the proper height, that disturbs the equilibrium, and produces inclination.* But, at the same time that it *destroys the equilibrium* which would exist if the efforts of the *wind and water* intersected in the proper point, still, in causing the ship to *incline*, it produces a *new equilibrium*, by bringing into action the *relative force* or *moment of stability of the ship*, which is the *weight of the ship multiplied by the horizontal distance of its centre of gravity from the vertical of the metacentre, or point of stability*; and this moment or relative force *is equal to the absolute force of the wind multiplied by the distance of its centre of effort* *from the metacentre or point of stability.* These two moments, or rotative forces, are always in *perfect equilibrium,* and their moments augment as the inclination increases, for, the increasing power of the wind, as well as augmenting its own relative force, by producing a greater inclination, increases the horizontal distance of the centre of gravity of the ship from the vertical of the metacentre, and which augments the moment of stability of the ship.

Now, the centre of gravity of the efforts which produce this new equilibrium is evidently in the point *velique,* that being the fulcrum of the lever to which the powers are applied, and may be considered as the centre of gravity of a new system, or of the whole of the operating forces. High authority has been quoted, to shew that this point does not give way, and that the ship does not incline when the centre of effort of the wind is at a proper height. We may therefore very safely conclude, that it does not give way when the centre of effort of the wind acts above or below it, but becomes the fulcrum of the lever to which the power of the wind is applied, and consequently the axis of rotation also. The small inclination which the power of the wind can ever produce longitudinally is also a strong proof that the axis of longitudinal inclination, or vibrations, is situated very high; for the smallness of the inclination may be attributed to the shortness of the lever to which the power of the wind is applied, and the great distance of the centre of gravity of the ship below the metacentre, and which gives a very great moment of stability; and to this great resistance to longitudinal inclination, or vibrations, may also be attributed the small extent of the motion of pitching compared to that of rolling.

It has been observed in a former paper, that if the mean direction of the lateral effort of the water, or resistance to lee-way, is *above* or *below the axis of rotation,* it will tend to *augment* the stability of the ship in the *former* case, and to *diminish* it in the *latter.* In fact, it *fixes the actual situation* of the metacentre or point of stability *higher* or *lower* than the *vertical effort* of the water alone may determine it, according *as the mean direction of the lateral effort* may intersect *above* or *below.* When the mean direction of the lateral effort *intersects the point which the vertical effort alone determines as the point of stability,* then no deviation follows, and the stability is neither augmented nor diminished; and, whether the effects produced by these efforts are considered *separately,* or whether we consider them as *combined* and forming one *composed effort, whose direction shall determine the place of a certain point,* still it amounts to the same thing, namely: That of finding the *actual situation* of the *metacentre,* or point of *stability,* at any given inclination, and which is no other than the fulcrum of the lever, and the axis round which a ship turns.

It has been before observed, that the centre of longitudinal vibrations is determined and governed by the same laws as the axis of rotation in rolling or lateral inclination; consequently, it is the mean direction of an effort composed of the resultants of all the different pressures or resistances of the water on the part immersed, which determines the situation of the metacentre, or point of stability longitudinally, or the point velique of M. Bouguer; for they are all one and the same. If, for example, when a ship is impelled through the water, the *mean direction* of *the effort on the forepart alone intersects above the point which the resultant of the vertical effort only* determines as the situation of the metacentre, then the stability will be augmented, and, consequently, it is the mean direction of these efforts combined which determines the *actual situation* of this important point.

We know that inclination laterally is produced by the power of the wind being applied to a very long lever; and that the inclination in this way is sometimes very considerable, and much more so in some ships than in others. We also know that the power of the wind is applied equally high when a ship sails before the wind; and, yet, when this power *alone* produces inclination longitudinally, it is but trifling. The first and most natural question, therefore, is, Whence does this difference arise, or what does it proceed from? The great lever-power which the effort of the wind possesses in producing inclination laterally proceeds from the *fulcrum* or *point of support* to the lever being situated very low; and its moment, or relative force, is in proportion to the *distance* of *this point* from the *centre of effort of the wind;* being equal to this distance multiplied by the amount of absolute force employed; consequently, *the direction* of *an effort intersecting the point of support*, or *fulcrum*, *would not produce inclination.* Therefore the only correct conclusion is, and which is strictly consistent with the laws of mechanics, that the *centre of effort of the wind acting equally high longitudinally, without producing inclination*, proceeds from the *point of support*, or *fulcrum* being situated *high*, *also*, and that *the direction of the centre of effort of the wind intersects it;* the *effort of the wind in this case* being that of *its absolute force alone.* But when its *centre of effort intersects above the point of support*, or *fulcrum*, then *it possesses a greater power*, in consequence of being *applied to the arm of a lever*, and which gives it a *relative force*, *equal* to the *amount of its absolute force multiplied by the distance of the centre of effort from the metacentre*, this being the length of the lever to which it is applied; and this *relative force necessarily produces inclination;* the *lever turning on the metacentre*, and which is the *axis of rotation* as well.

We are taught to consider the theory of naval architecture in a strictly mathematical and mechanical sense; and it is very evident, that, with respect to the axis of rotation of a ship, in being so guided we cannot err. But, unfortunately, theory, as regards this point, has assigned to a ship properties which no other mechanical body possesses, and which are at variance with all laws, physical and mechanical.

M. Bouguer says, "We may regard a floating body as forming a pendulum renversé, of which the centre of gravity of the ship would be the point of suspension, and the distance of the centre of gravity from the metacentre its length." Now, although the theory, with respect to this point, by considering the centre of gravity of the ship to be the axis of rotation, is entirely erroneous, still, by simply reversing the order of M. Bouguer, and considering a floating body as a common pendulum, and the metacentre the point of suspension, in place of the centre of gravity of the ship, we render the theory on this important point perfectly correct; and which strictly agrees with results derived from experiments on floating bodies, and on a mechanical apparatus.

The great importance of possessing a correct knowledge of where the axis of rotation of a ship is situated has been alluded to before, with respect to the mean direction of the lateral effort of the water, or resistance to lee-way; and, that the direction of this effort passing between the centre of gravity of the ship and the metacentre, and by supposing the former to be the axis of rotation, would lead to a conclusion, that the stability would be augmented by it; whereas, the metacentre being the axis of rotation, the stability would actually be diminished. And, on the same principle, results contrary to the generally received opinion would proceed from the effort of the shock of a sea. It must also appear very evident, that the correction of an error in so important a point as the axis of rotation, will tend to render more perfect other parts of the theory which are equally worthy of consideration. The difficulty of masting a ship correctly is generally ascribed to an imperfect knowledge of the action of fluids on bodies in motion. But when it can be proved that the lateral effort of the water, or resistance to lee-way, produces effects so contrary to general opinion, we may very safely conclude, that the present imperfect system of masting ought rather to be attributed to the want of a correct knowledge of where the axis of rotation is situated than to an imperfect knowledge of the action of fluids on bodies in motion.

The figure No. 2, of the plate in our last number represents correctly, on a reduced scale, the method of finding the moment of stability longitudinally, according to the method of P. Hoste. Weight of the model, 361 ounces; g, its centre of gravity; $d\ h$, water-line when inclined. It exhibits an inclination of 5° 30′, produced by the weight, w, of 64 ounces. The model in this state was in perfect equilibrium, in consequence of the *equality* of the *two moments*, or *relative forces*, namely: that of the *inclining weight*, w, *multiplied by its distance*, $a\ b$, *from the vertical*, $m\ n$, *being equal* to the *weight of the model mul-*

tiplied by the *distance*, *g b*, *of its centre of gravity from the same vertical*, *m n*. Consequently, the *position* of *this vertical*, which *establishes* the *equality* of the *two relative forces*, *determines*, *also*, the *situation of the metacentre*, *m*, and *the centre of gravity of a new system*. In consequence of the displacement and the *pressure* on the water being *increased*, and the *centre of effort of the water*, which is the *fulcrum*, being *between* the *weight moved* and the *moving power*, the *model* in *this state* possesses the *properties of a lever* of the *first kind*. Let us now suppose the model to be floating in a horizontal position, and the *metacentre m* to be the situation of the point *velique* of M. Bouguer. We have the authority of Bouguer and Chapman to prove, that, when the *centre of effort of the wind intersects* the *point m*, and as represented by the line *s t*, *it does not produce inclination*; but, that when the *centre of effort acts above*, and as represented by the line *u v*, then the ship will *incline* towards *the head*; and it is very evident in such a case, that the relative inclining power of the wind would be the *amount of its absolute force multiplied* by *the distance* of *the line u v from the point m*; and that this would be *equal* to the *weight of the ship multiplied* by the *horizontal distance*, which *the inclination would produce*, of *the centre of gravity*, *g*, *from the vertical*, which *determines the situation of m*. And, thus, and in consequence of the *constant equality* of the *two moments*, *m* is the *centre of gravity* of a *new system*, or of the *operating forces*. And, as the *power of the wind does not produce inclination* when *intersecting this point*, it must *evidently* be the *axis of rotation*. And, whether longitudinally or transversely, the situation of the metacentre is governed and determined by the same laws.

To prove the effects which the lateral effort of the water, or resistance to lee-way, may produce, the model was inclined laterally with various keels. With the keel *k l p o only*, 16 ounces inclined it to 11 degrees: with the additional keel *p q r l*, of *fir*, nearly equal to *half the weight of water*, 16 ounces inclined it to 12 degrees: and, with *p q r l*, of *oak*, nearly *equal* to the *weight of water*, the same weight inclined it to 11 degrees 30 minutes.

With *k l p o*, 32 ounces inclined the model to 22 degrees: with *p q r l*, of *fir*, the same weight inclined it to 24 degrees: and, with *p q r l*, of *oak*, the same weight inclined it to 23 degrees. This proves, that, although additional keel may cause a *diminution* of *lee-way*, yet it tends, also, to *diminish* the *stability* of the ship. For, notwithstanding the centre of gravity of the model is lower with the oak keel, *p q r l*, than with *k l p o only*, still it causes a greater inclination; and it is the great addition of surface, and its being situated so far from the axis of rotation, which produces it. It is proper, however, to observe, that the surface added is very great in proportion to the size of the model, this being necessary to give correct results. On the other hand, the vertical effort of the water only operated on the model in the experiment, and which is much less than the lateral effort, or resistance to lee-way would be on that part.

Plymouth, July 29, 1833.

(To be concluded in our next.)

III.—St. Kilda. Hebrides.

In the summer of 1831, Captain A. T. E. Vidal, R.N., was appointed to the temporary command of H.M.S. Pike, (Lieut. Wigley,) for the purpose of obtaining the deep-water soundings on the western coasts of Ireland and Scotland; a feature in the hydrography of our own "sea-girt isle" of which we had been previously in utter ignorance. The parallel of the Skellig rocks was the northernmost limit of Captain White's examination in the Shamrock, beyond which the lead was of no use to the navigator, for enabling him to estimate his distance from the land, when he could get no astronomical observations for his guidance. And, perhaps, in no part of the world is that species of knowledge more necessary than on the boisterous and dangerous western coast of Ireland. Happily for navigation, the importance of knowing the approaches to this coast was seen in its proper light by the present Hydrographer* to the Admiralty, and Captain Vidal was most properly selected to investigate them.

Having prepared his vessel for this duty, and obtained the necessary instruments, Captain Vidal immediately proceeded to Lough Swilly, tracing the bank of the whole western coast in his way. Buncrana church, forming one of the stations of the ordnance survey, was adopted by Captain Vidal as the point from whence to measure his chronometric distances. The results of these observations, in the course of this service, we shall reserve for the concluding part of our notice of his proceedings.

After obtaining his observations at Buncrana, Captain Vidal put to sea, to renew his examination of the bank, on the 20th June. The boisterous weather that ensued impeded his operations considerably, and the Pike arrived at the little island of St. Kilda on the 28th of the same month, after having obtained some important lines of soundings on her way. We shall reserve Captain Vidal's remarks on St. Kilda for the present, and follow the Pike in her subsequent proceedings. Leaving the island on the 29th June, Captain Vidal passed Suliska and Rona, and proceeded to Balta, where he arrived on the 12th July. It was for the purpose of obtaining the meridian distance between it and the Ferroe Islands that the Pike put into Balta, from whence she sailed again on the 15th. Capt.

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* Captain F. Beaufort, R.N.

Vidal observes, that the commerce of the Ferroe Islands being a monopoly of the crown of Denmark, no foreign vessels are permitted to trade there. A small brig is chartered by that government, and performs three voyages from Copenhagen to them in the favourable season of the year: and this little vessel is equal to conduct the small trade of the Ferroe islands. Travellers wishing to visit these islands would find their only method of doing so to be by means of this brig, unless they hired a vessel expressly for themselves, a plan which appears to have been adopted.

The anchorage of Thorshavn is much exposed, and the Pike was obliged to put to sea, to avoid a gale of wind there on the 20th July. From hence a line of soundings was carried to the Monk rock, off the south point of Isle Suderoe.

The position of this rock was found by Captain Vidal to be different from that assigned to it in Captain Born's chart. The weather was boisterous, and he was prevented from landing; but, as the Pike ran between the rock and the island, a depth of 13 fathoms only was found. This passage is not recommended by Capt. Vidal, and should be avoided if possible. When the Pike passed through it, the wind was fresh from the westward, making against the tide, which was running upwards of six miles per hour. The high sea occasioned by this opposition rendered it difficult to steer the vessel, and a press of canvass was necessary to prevent her being pooped.

On the way from Suderoe to Balta, the deepest water found on the British bank was 683 fathoms. On the 26th Captain Vidal arrived at Balta. After obtaining observation at Balta, on the 30th July the Pike sailed for Sulisca and Rona, and anchored on the east side of Rona on the 14th August.

These islands were found to be incorrectly laid down, and their proper positions were carefully ascertained by Captain Vidal. To the north of Rona, a rocky patch of 30 fathoms was found, not laid down in the charts.

From these islands the Pike returned to Lough Swilly, and anchored off Buncrana on the 26th of August. We will defer following Captain Vidal at present in his examination of Rockall bank, for the purpose of giving some account of St. Kilda, from his remarks, in conjunction with those of Dr. M'Culloch relating to it, a few years ago.

> On approaching the landing-place, where a crowd of people was ready to receive us, a tall and matron-like female figure advanced before the rest, with an air of mixed dignity and command, hailing us with the words "Friends or enemies?" We had no sooner satisfied the governor, who seemed to be Martin's Amazon Queen again revived, than the whole of the people rushed down into the water, and, seizing on the gunwales of the boat, hauled us up dry before we well knew where we were.* We could not but admire the

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* This appears to be the custom of the islanders. Captain Vidal, on landing, was served the same way, without the preliminary question being asked.

courage of the minister's wife, who suspected us to be Americans, remaining ignorant of the peace that had not long been concluded. They received this news with joy, estimating, like their betters, that war from which they were remote, just as it affected themselves. In an American war they participated with peculiar feeling, not only on account of their defenceless situation, but because it had raised the price of tobacco; an article through which the readiest access to their heart and services is gained.

As far as I could judge by pacing, St. Kilda is about three miles long,* and, where widest, nearly two; its shape resembling somewhat that of a leg of mutton, to use an elegant comparison. Martin calls it two miles long: he is more likely to be right than me. On the south-east side, there is a bay about half a mile in breadth and depth; the land descending to it by a steep declivity, and terminating, on one part, in a stony and sandy beach, and, on the other, in those low shelving rocks which form the landing-place, near to which the town is situated. This bay is covered by the lofty and picturesque rock Levenish; and its eastern precipitous boundary increases in height in proceeding round the point toward the north-east. Here the precipice may indeed be called formidable; the high hill Conochan being cut down almost abruptly from near its summit to the very water's edge. It cannot therefore be much less that 1300 feet high; and, unless it is exceeded by that of Foula in Shetland, which I was unable to measure, it is the loftiest cliff in Britain. It is a dizzy altitude to the spectator who looks from above on the inaudible waves dashing below; and, though too well versed in this kind of scenery and adventure, to feel any thing for myself on such occasions, I must confess that it exceeded the stability of my nervous system to witness the descent of one of the bird-catchers,† who was parading with the hair rope round his waist, and only waiting the word of command; anxious, as it seemed, to make a display, but quite as well pleased to remain where he was.

There are some rocky points near the foot of this precipice, one of them presenting a magnificent natural arch, which, in any other situation, would be striking, but are here lost in the overpowering vicinity of the cliffs that tower above them. In proceeding, these soon become low; but, at the north-western extremity, the island again rises into a hill nearly as high as Conochan, terminating all round towards the sea by formidable precipices, which are continued nearly to the south-eastern point of the bay. Here, a rock, separated by a fissure from the island, displays the remains of an ancient work whence it has derived the name of Dune. The surface of the land forms an uneven ridge, somewhat rocky to the south, but presenting elsewhere a nearly uniform, smooth, and green surface. Excepting some imperfect peat on the highest point, the whole is covered by a thick turf of the finest and freshest verdure: the consequence, probably, as much of its perfect drainage as of its trap soil. It contains three principal springs, of which Tober-nam-buy rises by a large well, producing at once a considerable stream. My followers spoke of it with great enthusiasm, as abounding in all sorts of good qualities. The love of water, simply for its own sake, and independently of any traditionary virtues, is universal among the Highlanders, who stop to drink at every stream that trickles down a rock, whether thirsty or not. "Very fine water: no such water in your country," is a common remark; and they seem to drink it out of mere pride, because there "is no such water any where as in the Highlands." They seem to have as much respect for it as good Izaak Walton, who calls it the eldest daughter of creation. Truly, they are entitled to some advantages in return for the waters in which they are for ever enveloped, in the shape of clouds, fogs, mists, rains, rivers, lakes, and bogs.

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* Captain Vidal makes it about the same.

† An interesting account of this practice at the Shetland Islands will be found in the Saturday Magazine, No. 61, p. 228.

The small island Soa is a lofty green hill, precipitous nearly on all sides, and separated from the north-western extremity of St. Kilda by a narrow strait, in which lie two picturesque rocks, one of them being perforated by an arched passage. The view from above is singularly striking, and even sublime, from the depth and narrowness of the chasm, and the wildness of the enclosing rocks. The light of the day did not seem to reach it, the objects being illuminated by the reflections from the sea, as it foamed through the mists which rose from the breaking waves, adding to a depth that seemed indefinite, and the light thin clouds, which were flying in from the western ocean, at every instant involving the summits of the cliffs so as to produce the most magnificent effects of light and shadow, added to a mysterious and romantic uncertainty, which seemed to remove it from the world of realities; a vision of some disturbed dream. Soa is said to contain four or five hundred sheep, perfectly wild, which the people contrive to catch and bring away; but how they climbed up to it, or how they descended, it was only for themselves to comprehend.

Though the outline of St. Kilda is never sufficiently elevated or varied to afford a picturesque object, it is subject to atmospheric effects which offer endless studies for the higher and poetical department of landscape. Fertile as are the other islands of this sea in all the accidents of colour and light that arise from these changes, they fall far short of this one, where the variations of the atmosphere are incessant; where they are accompanied by effects equally various and changeable, of light and shadow, of rain, and mist, and storm, and of clouds in a thousand new and romantic forms and colours, such as neither poet nor painter ever imagined: the whole producing the most splendid and unexpected combinations with the land and with an ever restless and changing sea. The cause of these is found in the detached position of this island. Sufficiently high to arrest the course of the clouds from the Western Ocean, it is often involved in mists and showers, and blackened by shadows, even when the rest of the atmosphere is settled and clear. Hence, also, it sometimes precipitates them over all the surrounding sea and sky: thus, while it produces the most brilliant and varied effects, offering to the philosopher the most beautiful examples of the power of land in attracting water from a transparent atmosphere. The value of accidents of light to landscape is well known; and that they are especially incidental to mountainous countries is not less familiar. The forms of the ground in these cases, also, confers on them a power and variety which they want in flatter countries. In these misty and remote landscapes, moreover, their effect is greater, while it is more needed, from the comparative absence of local colour and variety of forms, and from the frequent difficulty of procuring breadths of light, and shadow, in any other manner. If the uniform tints and outlines of grey precipices or brown mountains require splendid contrasts to give them interest, so the wider sweep of hill and dale must be rendered effective by shadows, not by shade, which it seldom displays with advantage. It is to the pencil of a Turner alone that St. Kilda will furnish employment. A dizzy height from which the eye looks down over jutting crags retiring till they are lost in air; a boiling sea below, without a boundary; dark cliffs beaten by a foaming surge, and lost in the gloom of involving clouds; the mixed contest of rocks, ocean, and sky: these are the subjects which it offers to him who, seeing with the poet's eye, knows how to speak the language of poetry with his pencil.

Of St. Kilda, who has communicated his name to this island, nothing seems to be ascertained. At least, I have searched the Irish Hagiology for him in vain. In Martin's time, it appears also to have been known by the name of

Hirt or Hirta, a term derived from the parent of terra by the same inversion as our own earth. The ideas of those to whom St. Kilda was the whole earth must have been as expanded as those of the mite, whose round world is a Dutch cheese. It is a remarkable instance of the zeal, or wealth, or influence, of the early clergy, that, in a spot like this, three chapels should have existed. They were extant in Martin's time, and the very obscure traces of two still remain. The ardour of reformation in Scotland, as if more anxious to destroy what it abhorred than to establish what it approved, seems to have left them without a minister; esteeming the want of religion, we must presume, preferable to what it pleased to term idolatry. The fervour of that holy zeal which has also condemned the present inhabitants to worship in their storehouse, may here, according to Johnson's remark, be contrasted with the laziness of the monks, who provided them with the means of performing the public duties of religion with respect and decency. But the Scottish Society for the Propagation of Christian Knowledge had laudably exerted itself to remove the chief part of this evil, by the establishment of a resident missionary, on a salary of £35 a year; a sum which, small as it may appear, seems to have been adequate to the providing of competent persons. I understand by a recent report, that the minister who held this office in 1815, the period of my visit, has left the island. But he will probably be replaced.* Independently of its more obvious advantages, the presence of such a person serves to connect the people under the form of a political society. In a narrow circle like this, the existence of one superior intellect is a bond of general union, and a habit of deference becomes equivalent to law; as it indeed does in states much larger than St. Kilda, where its value has sometimes scarcely been suspected till the progress of reason, as it is called, had demolished it. At that time there was no school, and not one of the inhabitants could read. Mr. Quidam hopes that his representations were, at least, aiding and abetting towards the establishment of the present schoolmaster; while the only reason for his vain-glory is, that it is the only good result to himself or any one else that has ever flowed, or ever will, from all his uncountable labours. If you ask who "the Gentleman" is, I must answer as the Jesuits used in similar cases, "talis qualis." English is still unknown here, though now found more or less diffused throughout all the maritime Highlands. I know not if it is to be taught in this school.

The men were well-looking, and appeared, as they indeed are, well fed; exceeding in this, as in their dress, their neighbours of the Long Island, and bearing the marks of easy circumstances, or rather of wealth. But the women, like the generality of that little favoured sex in this country, appeared harsh in feature, and were evidently impressed, even in early life, by those marks so dreaded by Queen Elizabeth, and recorded in the well-known epigram of Plato. This must be the consequence of exposure to the weather, as there is no want of food here as a cause, and as the children of both sexes might even be considered handsome. The late report, to which I have just alluded, seems to insinuate that this appearance of wealth is changed, at least as far as relates to the article of dress. The change of system may explain this. It may be thought remarkable, that these people, though so remote, should have entirely conformed to the English or Lowland dress. Not a trace of tartan, kilt, or bonnet, was to be seen; so much has convenience gained the victory over ancient usage.

The absence of the minister was a serious impediment to my political inquiries; but when St. Kilda shall hereafter read English, and its critics write reviews, these oversights will be kindly, or otherwise, amended. Excepting a small tract near the village, the whole island is in pasture, though the soil would admit of cultivation to any extent. But the violence of the west winds limits the agriculture to the south-east declivity, where there is most shelter. This tract is held conjointly by all the village, on the system of run-rig, the ridges being interchanged after three years, and the work is performed by the spade and caschrom. The produce consists chiefly of bear, as in the Long Isle; but it is the finest in the Highlands, having maintained its celebrity even from the time of Martin. The oats are much inferior in quality, and are very scantily cultivated; nor are potatoes grown to nearly the extent which is usual in Highland farming. There is no attempt at a garden, of course. The same reporter gives a less favourable account of the grain than I received, and says that the returns do not exceed three. A few horses are kept for the purpose of carrying peat, together with some goats, which are milked like the sheep. But the pasture is principally allotted to sheep and black cattle. In Martin's time, the former amounted to about 1000, and the latter to 90; a tolerable measure, probably, of their present proportions. As Soa and Borera contain also from 400 to 500 sheep each, the whole amount of the flocks belonging to St. Kilda must be about 2,000. The breed of sheep is exclusively the Norwegian, distinguished by the extreme shortness of their tails; and the wool is both thin and coarse. They are occasionally of a dun colour, and are subject here, as well as in Iceland, to produce an additional number of horns. This mutton is peculiarly delicate, and highly flavoured. The cattle are small, and both the ewes and the cows are milked. The cheese, which is made of a mixture of these milks, is much esteemed, forming one of the prevailing articles of export to the Long Island, the mart in which all their little commerce centers. Their other exports consist of wool and feathers; and with these they purchase the few articles of dress or furniture which they require.

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* From Mr. M'Kenzie, the present minister, a missionary from the Scotch church. Captain Vidal received every possible attention as soon as he had made known the object of his visit.

On approaching the island, the eye is caught by the great number of small stone buildings scattered over it, naturally mistaken for the habitations of the natives. These are the "pyramids" of Martin, and are used for saving all their produce; their peat, corn, hay, and even their birds. It is remarkable that this practice should have been alluded to by Solinus as common in the Western Islands, and that it should now be entirely unknown every where else. It is well worthy of being imitated on all the western shore, where the hay and corn are often utterly lost, and generally much damaged, by the rains, and by the slovenly method in which the process of harvesting is managed. These structures are round or oval domes resembling ovens, eight or ten feet in diameter, and five or six in height. They are very ingeniously built by gradually diminishing the courses of dry stone, affording free passage to the wind at the sides, while the top is closed by heavy stones, and further protected from rain by a covering of turf. No attempt is made to dry the grass or corn out of doors, but when cut they are thrown loosely into these buildings, and thus secured from all future risk. It would be a heresy worthy of the Quemadero, to suppose it possible that Arthur's Oon, the temple of the god Terminus, the never-to-be-forgotten cause of antiquarian groans and remonstrance, had been one of Solinus's ovens—a St. Kilda barn. Yet there is a most identical and unlucky resemblance between them in construction, form, and magnitude; and, indeed, I have long been inclined to think that this Otho was only a bad halfpenny. It would be very kind, in the mean time, if the Knights of the Oven would tell us when it was the fashion to build Roman temples like this, of rude and dry masonry, after the Christian æra, and what temples were erected to this personage after the well-demonstrated age of Numa or Tarquin, when this obstinate post of a god refused to budge, even for Jove. But I must not scour the shield too close.

A principal part of the food of these people consists of the flesh and the eggs of sea-birds. Among those which frequent the island for the purpose of breeding, the gannets and puffins are principally in request. Many species of gull also breed here, together with auks, cormorants, guillemots, and the more rare fulmar petrel. Martin has given a full and correct list. It were well if he had been as full on other matters, instead of filling his book with the history of John the Baptist. The larger birds are taken on their nests by the hand, or by snares, the birdcatchers descending the cliffs by means of a rope of hair secured above. Frightful as this operation may appear, accidents are extremely rare, nor was even the possibility of one suggested to us. The puffins are taken in their burrows by small dogs; and this department of the chase seemed to be conducted by the children, while the men flew at higher game. It is also usual to take the auks, and other birds that build just below the summits of the cliffs, by knocking them down with sticks as they are blown upwards by the force of the wind as it meets the rock. The tameness of the puffin is such that they will almost suffer themselves to be taken by the hand; and the gulls sit on the houses within a few yards of their enemies, just as domestic pigeons do on our farm-houses. Whether this be stupidity or good humour must be left to a treatise on the metaphysics of birds. The much-abused goose has a different system, though by what means his reputation has been so perverted it would be hard to say. Thus, the world gives a bad name, and distributes its praise and blame. He bore a far different character in ancient Rome; and in Greece, too, since Aristotle says that he made a point of keeping silence whenever the eagles flew over Mount Athos. The puffins are not so cunning.

Although cod and ling abound here, the people do not fish for them; nor do they seem to take fish from the rocks, as is common in the islands. This must be attributed to the abundant supply of food which their birds yield, and which they prefer to all other diet; although they would prove an intractable morsel to any but a well-educated stomach. But the gastronomy of one country is not the gastronomy of another; and a St. Kilda man would, doubtless, find it as inconvenient to feed on putrid skate with an amphytrion of Barra, as a Barra man would to remove an indigestion produced by rancid gannet, by means of the stomach of the same animal stuffed with its own fat.

Whether a fishery might not advantageously be carried on here, is a question which concerns the proprietor more than themselves. Were it even for domestic consumption alone, the population might thus be increased; but it would not be effected without first raising the rent of the island. A fishery for exportation could scarcely be productive of any advantage to them; as it is apparent enough that they would inherit little more than the labour, while the proprietor would take the profits. They would have little reason to thank me for such a suggestion; since they have much to lose, and little to gain, by any change of their present easy system. But I am now writing the observations and opinions of 1815. The island was then immediately under its very liberal proprietor. It is now in the possession of a tacksman; so that much modification must have taken place. It cannot be for the better; and, had I to write this again, from fresh observations, I suspect that I should be compelled to make material changes.

The rent of St. Kilda[*] was then extremely low, compared with the average of insular farms, being only £40, or £2 per family; a sum far inferior to the value of the land, excluding all consideration of the birds. Independently of the food which these afford, that value is considerable; as the whole of the rent was paid in feathers, not in money, while a surplus of these also remained for sale. Thus, the land was, in fact, held rent-free; the whole amount being also paid by a small portion of that labour which was more than compensated by the food it produced. It is evident that this rent might have been augmented without any reproach, independently of an increase of value by a division of the common farm, and by the addition of a fishery. Nor need this have diminished the happiness of the people, if moderately and humanely done; as insufficient employment is no great or laudable source of felicity to an uneducated population. If, however, St. Kilda chose to refuse payment, and rebel, it would not be very easy to execute a warrant of distress or ejectment, without a fleet and an army.

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[*] At the time of Captain Vidal's visit, the islands were the property of a Mr. M'Leod of Skye, whose father purchased them some years ago for £1,300. They are rented for £80 per annum; and the rent, paid to him in kind by the inhabitants, yielded about £150. The population of the island consists of 103 individuals, not one of whom understands English, excepting the minister, and one of the leading men.

All this may be very pretty speculation for an economist; but I shall be sorry to find that it has influenced the conduct of the proprietor. When we have been saddened at every step by the sight of irremediable poverty and distress in all its forms, it is delightful to find one green place in this dreary world of islands where want is unknown. I trust that St. Kilda may long yet continue the Eden of the Western Ocean. It is a state of real opulence. Their arable land supplies the people with corn, their birds with game, and their cattle with milk. The surplus of the latter is also consumed in the island; as the long navigation prevents the exportation of live stock. This is fortunate for them; as the want of commerce prevents the acquisition of that disposable wealth which would speedily find its way to the proprietor in the form of rent. It is thus, also, in a great measure, that their condition is so far superior to that of the inhabitants of the Long Island, where there is a regular demand for the produce of pasturage, and where the people are, of course, debarred from the use of animal food. But is the history of 1815 that of 1823? I hope so.

If this island is not the Utopia so long sought, where will it be found? Where is the land which has neither arms, money, law, physic, politics, nor taxes? that land is St. Kilda. War may rage all around, provided it be not with America, but the storm reaches it not. Neither Times nor Courier disturbs its judgments; nor do "patriots bursting with heroic rage" terrify it with contradictory anticipations of that "which will ne'er come to pass." Francis Moore may prognosticate, but it touches not St. Kilda. No tax-gatherer's bill threatens on a church door; the game laws reach not gannets. Safe in its own whirlwinds, and cradled in its own tempests, it heeds not the storms which shake the foundations of Europe; and, acknowledging the dominion of Macleod and King George, is satisfied without inquiring whether George is the first or the fourth of his name.

Well may the pampered native of the happy Hirta refuse to change his situation. His slumbers are late, his labours are light, and his occupation is his amusement; since his sea-fowl constitute, at once, his food, his luxury, his game, his wealth, and his bed of down. Government he has not, law he feels not, physic he wants not, politics he heeds not, money he sees not, of war he hears not. His state is his city, and his city is his social circle; he has the liberty of his thoughts, his actions, and his kingdom; and all his world are his equals. His climate is mild, and his island is green; and, like that of Calypso, the stranger who might corrupt him shuns its shores. If happiness is not a dweller in St. Kilda, where shall it be sought?

With a constitution in church and state so enviably perfect, nothing seems wanting to render this island an absolute Utopia, but an academy. I do not mean the new Gaelic school, nor "Academus' sacred groves," because, unluckily, groves will not grow in Hirta's green isle; no, nor that thing called an Academy by the title of Islington House, or any other House, where young gentlemen are taught all the arts, sciences, languages, and much more, besides drawing and dancing at two guineas extra, by somebody's butler who has married somebody's cook; and where the money which cannot be gained by cramming the head is secured by stuffing the stomach with Norfolk dumplings, and other less digestible matters than Greek or gannets. No, Sir Walter, I mean an Academie, an Academia, a kind of a Royal Society, in short; for, now, alas, a philosopher in St. Kilda is "rien, pas même academicien." Were this laudable project put in execution, who knows what learned papers we might shortly have on the winds, and on the laws of the gannets, and on the gravity of feathers; besides which, my half-occupied friends, who are now obliged to doze away the fat which they have swallowed till it evaporates from them in the form of gas-light, might find noble opportunities of going together by the ears, of electing presidents, sitting in councils, rejecting the papers which some one else ought to have written, and, finally, of rivalling, in a Bibliotheque Universelle Kildense, the superhuman efforts of all those republics of mind which cannot fail to be replete with ideas, or ideal, it is the same thing, when they are so steadily employed in telling the world that such they are. The only difficulty for the academy of Hirta is the choice of a name. But they may copy from Bologna, and call themselves the Torbidi; or, from Florence, and call themselves the Humidi; or, as they deal in feathers, they may borrow the name of Volanti from Naples, or of the Caliginosi from Ancona, which is more suitable still; or, as it is a foggy land, they may be the Fumosi after Reggio; or, perhaps, which is best of all, belonging to no region on earth, they may be styled, after Pezzaro, the Eterocliti.

I cannot give you the dark side of this picture, if I would, because I saw it not. That, it is said, depends on the state of a man's own stomach; but whether that be true or not, all was bright. There is no place without its miseries, as philosophers say; but I have seen enough of those elsewhere, and am desirous to believe that this is the seat of optimism—the lost Eldorado—one of the never-found fortunate islands—the happy valley, on which there are no gates but those of the inclination. The balance must be struck hereafter by some Mundungus, who will have the double pleasure of setting up his own theory and knocking mine down: it shall never be said that I travelled from Barra Head to the Butt of the Lewis, and found nothing to praise. But I must lead you back to meaner matters.

This is the only place in which I ever saw the quern in use, forming a laborious occupation for the females; as, to supply a moderate family with meal by this wretched mill, is nearly the work of a day. A mill might easily be erected, as in Shetland, on any of the streams; nor could the expense be an obstacle, as the horizontal water-mill of the Highlands does not cost many shillings. The stones vary from eighteen inches to three feet in diameter; the upper being fixed on a rude vertical axis of wood, which passes through the lower one and the floor of the hut. This rude building of stone and turf lies on the edge of a bank, or across some small rivulet, and is scarcely sufficient to admit a man stooping; the hopper being suspended from the roof by four strings. The axis, which is three or four feet long, works on any casual stone, by means of an iron gudgeon, which is the only metal work in the whole composition. Into it are driven the floats, varying from six or eight to eighteen in number, a foot or two long, and either flat or scooped out like spoons, so as to catch the stream as it runs past them. But, as the clack of the mill would also set the tongue loose, by relieving the old ladies from their labour, it is, perhaps, as well that they should go on singing the 'Επιμύλιον at their querns till their rents are raised. As my friends neither brew beer nor distil spirits, here is another point in which they emulate the golden age. They are content with water, and we felt no inclination to teach them any sweet vices. The whiskey and the tobacco that we had would not go far among so many; but those who gained a drink capered and laughed, and those who got none laughed equally to see their neighbours merry.

I puzzled myself to little purpose about the population of St. Kilda, a subject in which greater economists than myself have sometimes floundered. The minister was absent, and the minister's wife, having no children, had never considered this abstruse question. In Martin's time they amounted to 180, in twenty-seven families; and, as might be expected, they were then in a state of great poverty, increased, if we may judge from his account, by a systematic oppression. The imaginary harsh conduct of Highland proprietors to their tenants is not therefore a new grievance; as noisy people try now to make us believe. In 1773, according to Buchan, there were thirty families; yet, Macaulay, no ten years after that, states them at less than they are now, or under half the number in Martin's day, without thinking it worth his while to inquire into the reason. He is probably as correct in this as he is about the height of Conochan. How should any thing good ever come from one who has Mac for a prefix to his Bœotian name? We might as well look for a treatise on metaphysics from the little weasel and the great beaver, or for grace from the collision of Captain Wattle and Miss Row. I hope you do not suspect me of such a pronomen. I found exactly 103 individuals, distributed among twenty families; at present there are 110. We were informed that a native rarely left the island; and the natural question therefore was, why, with such means of living, they did not increase; since that increase takes place in a rapid and distressing degree in all the neighbouring islands. That they might here increase with impunity, is evident from the statement I have already given. The inhabitants accuse the small-pox as the cause of this check in former days; and it also appears, that, from mismanagement of some kind, they lose an unusual proportion of children. Politically speaking, this is a piece of good fortune; but it would have discomfited the plans of the philosophic Lewis XIV. who, with a view of increasing the French people, thought fit, most sapiently, to offer a reward for the production of ten children; on the same principle, doubtless, as he would have attempted to produce good musket practice by ordering his men to fire at the bull's eye.

All the world has heard of St. Kilda music and St. Kilda poetry, just as all the world has heard of the musical and poetical genius of the Highlanders, of this land of poetry, and spirit of poetry, and poetic imagination, and what not. We were prepared to bring away some valuable relics; the staves were ready ruled, the dragoman appointed; but, alas, there was neither fiddle nor Jew's harp in the island, and it was not remembered when there had been either. The Muses, whom the Abbé Cartaud calls Jupiter's Opera Girls, seemed to have carried their functions to warmer regions. There was a day when he who had slept on the top of Conochan awoke a poet, as was equally true of Snowden in the days of King Blegored. Hesiod also became one, by eating two of the laurel leaves that grew on Parnassus; you may trace the descent of the tale if you can. In the mean time the poetry has followed the music; and thus common fame maintained its well-earned reputation. We inquired for superstitions with equal success. Martin and the ghosts had vanished together. The cuckoo, who only used to come to prognosticate the death of Macleod or the steward, had fled with his notes to other climes.

The first remark I made on civic life in St. Kilda, was, that female curiosity has been sorely bespattered; for, on our approach, all the women withdrew to their houses with a retiring grace, not less striking, if less elegant, than that of their great mother Eve. As to the interior economy of the habitations, the people have probably experienced the advantages of darkness, smoke, and ashes, sufficiently to prove, experimentally, that they are the best of all possible houses. But they have good doors, with wooden locks and keys; which must, of course, be matter of luxury and not of necessity, though utterly unknown in the Highlands in general. Yet Birt mentions them as common in his day. It is probable, that, in the times of the Druids, the islanders cultivated pine-apples and melons; since the domestic midden, occupying the floor, and growing by successive stratification till the heads of the inmates reach the roof, is plainly a relic of this practice. If the high street of this city is a good deal encumbered with the heads, legs, and wings of gannets, these are probably entertaining enough to the inhabitants, reminding them of good dinners past, and better to come. But it actually possesses a flagged causeway, so that the projectors have at least intended well, and we can only blame that corruption which time will introduce into the best-laid projects of man. Swift, in his Tale of a Tub, describes a land of feathers, and perhaps he drew the hint from St. Kilda. The air is full of feathered animals; the sea is covered with them; the houses are ornamented by them; the ground is speckled with them like a flowery meadow in May. The town is paved with feathers; the very dunghills are made of feathers; the ploughed land seems as if it had been sown with feathers; and the inhabitants look as if they had been all tarred and feathered, for their hair is full of feathers, and their clothes are covered with feathers. The women look like feathered Mercuries, for their shoes are made of a gannet's skin; every thing smells of feathers, and the smell pursued us all over the islands, for the captain had concealed a sack-full in the cabin.

I could not leave St. Kilda without looking at the ruins of that house which once concealed the very celebrated Lady Grange. I thought to have given you her romantic history by way of episode; but, after hearing five editions of it, and all of them different, I determined to have no hand in propagating a tale where the ratio of probable falsehood was four to one. So the boat was launched down the rock as it had been drawn up, and, with the cheers of the whole island, we embarked to plough once more the deep:

It is easier to acquire a bad reputation than to lose it; and, in whatever manner this common misfortune has happened to St. Kilda, it is not very likely that my efforts will avail to repair it. In Scotland, universally, we had heard of the voyage to this island as of a mighty problem in navigation, as an adventure little less than an expedition to the north pole; and, even in the neighbouring islands, the difficulty of landing, and the impossibility of carrying a vessel near the coast, were represented in the most formidable colours. But I had heard the same of Staffa, and of twenty other places, and had long learned to despise these exaggerations, which are the common result of ignorance, cowardice, or a love of the marvellous. For the Sound of Harris, which is the proper channel, a pilot may always be procured at Rowdill, whence the distance is about seventeen leagues. As it is either difficult or impracticable to land in southerly or easterly winds, it is not desirable to have a fair wind for this voyage. St. Kilda itself, and its accompanying rocks, are far too conspicuous to be a cause of uneasiness; nor are there any outstanding or sunken reefs, except one near Levenish, for which that high rock itself forms a sufficient mark. The whole shore of St. Kilda is so clean, that vessels of any draught may range it within gunshot; and the stream of tide is so inconsiderable, that there is no danger from calms, if a moderate offing is secured. The bay opens to the south-east, and is perfectly sheltered on three-quarters of the compass. Hence, it is exposed to few winds, and those not the predominant ones; while, from its depth and semicircular form, the westerly swell cannot often raise such a sea on the shore as to prevent a boat from landing. In this operation, indeed, the natives are uncommonly alert and dexterous, and, with a tolerable steersman, there cannot often be a sea in which a boat might not land, unless that were from the westward. There is good clean holding-ground, in depths ranging from four to seven fathoms, where a vessel of any size may lie for a tide, or more, with fully as great security as in most ordinary harbours; nor is there any difficulty in weighing, and running to sea on either tack, should the wind shift so as to blow in-shore. But there is no nautical record or chart of this island; so that seamen, impressed with false notions of its dangers, shun the coast, when they might often find convenient refuge in the harbour. There is also an anchorage on the north-west side of the island, where there is always smooth water, with a south or east wind, and where there is the utmost facility in putting to sea; while a boat may also land here, on different parts of the low rocks that skirt the shore in this quarter.

IV.—History of Hadley's Quadrant.

To the Editor of the Nautical Magazine.

Sir—In the observations on Hadley's Quadrant which you did me the favour of admitting into the first volume of your useful publication, I intimated (p. 351) an intention of drawing up a comparison of the English instrument with that of which Godfrey had sent a description to the Royal Society. The inquiry has carried me much further than I at first intended. I was induced to pursue it in many various directions, which led beyond my immediate purpose, and I have therefore extended the object of the remarks which I have to submit to your consideration. I should be well satisfied if I could hope that any of your readers could receive half the pleasure from these details which I had in collecting them.

N. R. D.

Sprat, in his "History of the Royal Society," gives a list of inventions, for which we are indebted to the members of that body, and he mentions among them, "a new instrument, for taking angles by reflection; by which means the eye at the same time sees the two objects both as touching in the same point, though distant almost to a semicircle, which is of great use for making observations at sea."* This passage has been often quoted, and, although it does not inform us of the inventor's name, the honour of this earliest suggestion has been universally attributed to Dr. Hooke. The great fertility, and the ingenuity, with which he was constantly employed in devising new experiments and machines for the Society, naturally point to him; but I am not aware of any one's having referred to the precise authority which puts this fact beyond a doubt. It is sometimes said that Hooke completed this invention about 1664 or 1665,[*] but this date is indefinite, and is a mere conjecture, derived from Sprat's book having been first published in 1667. The exact time may, however, be collected from Birch's History of the Royal Society. In that valuable collection we find 1666, Aug. 22, "Mr. Hooke mentioned a new astronomical instrument for making observations of distances by reflection."[†] Aug. 29, "he mentioned again a perspective which he was preparing, for observing the positions and distances of fixed stars from the moon by reflection, and was desired to have it made with speed, and to bring the description of its structure and use.[‡]" And, accordingly, on the 12th of Sept. he "presented his new perspective for taking angles by reflection, which was approved of by the Society, and he was desired to bring the description of it in writing."[‖] This perspective is very probably the same to which Waller alludes in his collection of Hooke's Posthumous Works, where he says,[§] "I shall here add the description of an instrument for taking angles at one prospect, as I found it described upon a loose paper, *e e*, *f f*, (see fig. 3 following plate,) two long rulers, or arms, opening upon a joint or centre *g*, *h h*, a ruler divided into a thousand parts, measuring the angle at *g* by a table of chords; *a b* a telescope fixed on the ruler *f f* so as that the middle of it may lie perpendicular over the inner edge of the ruler; *a* the place of the cross-sight; *b* the object-glass; *i* the eye-glass; *c c* the reflex-glass, whose edge just touches the centre *g*, and whose surface *c c* is in the same plain with that of the inner edge of the ruler *e e;* on the back side of which glass is a brass plate, with two ears *d d*, at right angles, by which it is screwed to the ruler *e e*."

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* P. 246.

There is no occasion to discuss the measure of the angles by their chords, instead of a divided circular arc; for that is independent of the main principle on which the instrument is constructed, and there are other particulars which are more immediately to our purpose.

Hooke, by using only one reflector, saved the loss of much light; but he adapted his instrument by this means to the back rather than to the fore observation. In taking small distances, the great obliquity of the incident ray would certainly make the reflection more copious; but the fore-shortening of the mirror would at the same time increase the difficulty of bringing the image with certainty and precision to the edge on which the contact was to be formed. Nevertheless, the construction has a considerable analogy to Davis's staff, which at that time was in general use, and which was only applicable to taking altitudes by the back observation. Hooke's mirror was liable, likewise, to an objection which was common to it with the older instrument;[*] for the contact in both was to be made on a line perpendicular to the plane of the instrument. I shall have occasion to return to this point, and I will therefore confine myself now to one obvious instance of the consequences. In taking, for example, an altitude of the moon's lower limb, the sight, by direct vision, would of course be directed to the horizon, which must therefore be entirely behind the reflector, which occupied the lower part of the field of view. How, under such circumstances, would it be possible for the observer to be secure of preserving a coincidence, or even a parallelism, between the edge of the mirror and the horizontal line, which was hidden from his view? Again, the image of the moon's limb must not overlap the edge, and yet ought in imagination to be precisely in contact with it—a position in which it will cease to be visible. Might not the steadiest hand, and the quickest eye, be liable to mistakes in attempting such an observation?

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[*] Montucla Hist. des Math. Vol. iii. p. 522.

[†] Vol. ii. p. 111. [‡] p. 113. [‖] Ibid. p. 114. [§] p. 503.

I have said that this was most probably the instrument to which Sprat alluded, because, upon the whole, it answers best to his description: but there was another quadrant, which Hooke contrived, for measuring the angular distance of two objects, by bringing the images of them into contact by reflection. One of these, which he had sent to Hoffman, was at Berlin[†] in the middle of the last century, and it is referred to by Magellan[‡] in corroboration of his argument against the originality of Hadley. But an examination of the memoirs of the Berlin Academy (which he quotes) would have shewn him that this instrument had nothing to do with the question. It was constructed on a principle totally distinct from that made use of by Hadley: it depended not upon double reflection, but upon two single reflections. There were, in this instance, two telescopes, the axes of which were always radii of the quadrant, while one was fixed and the other revolved: the eye-glasses were both at the centre of the arc, which gave the measure of the angular distances; and two reflectors close to the eye-glasses were set at 45° with the axes, (the foremost occupying exactly half the field of view,) so that an eye placed at the side of the instrument could at the same time see the images formed in both the teles-

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[*] Davis was the navigator from whom the streights near Greenland have derived their name. He published "The Seaman's Secrets," with a dedication (dated 1594) to Charles Howard, Baron of Effingham, Lord High Admiral, who had commanded the English fleet against the Spanish Armada. In the second part of the book, he describes his invention of the back-staff. The particulars are not all very precisely detailed; but it seems that he placed the slit, through which the horizon was to be seen, below the staff, and in the plane of the instrument. There must have been many practical disadvantages attending this arrangement, and the slit was afterwards placed on the side of the staff, so as to be held parallel to the horizon. It appears to have been long before it was remarked that these disadvantages could be avoided, when reflection was used to assist the observation. But even in its first state, the back-staff was a manifest improvement on the instruments which had been previously used. In the French navy it was known by the name of "Quartier Anglois." (Bouguer Navigation, p. 243.)

[†] Mem. de l' Ac. Roy. de Berlin, 1749.

[‡] Description des octans et sextans Anglois, p. 118.

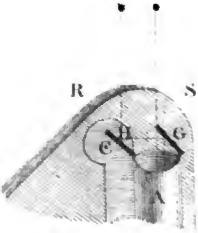


Fig. 2.

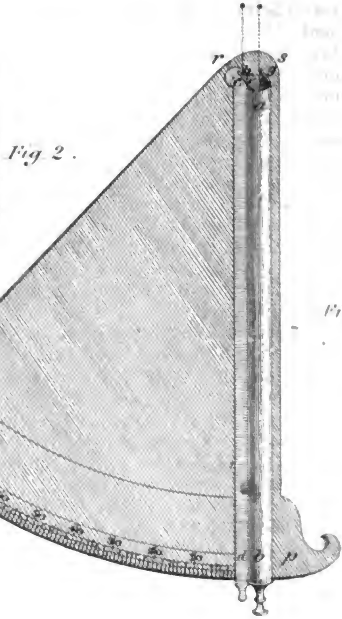
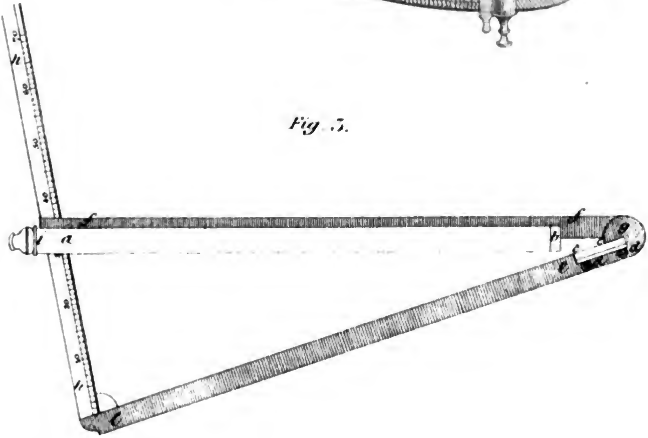


Fig. 1.

Fig. 3.



History of the Quadrant Plate I

copes. Magellan, to prove the priority of Hooke's invention, argues from the time of his death, (1702;) but if it had been of any importance, the date might have been carried much farther back, for the very same contrivance is distinctly described in Hooke's "Animadversions on Hevelius."* This pamphlet was published in 1674, which is so little later than Sprat's book as to suggest the possibility of its describing the invention to which he alludes. But there are circumstances which militate against this supposition. Hooke adds, that by a prolongation of the moveable telescope beyond the centre "any angle may be taken, even to the extent of two right angles."† But Sprat distinctly says, that the instrument which he describes would only "measure almost a semicircle." Now, there is nothing in Waller's description which theoretically involves a limit to this extent; but it is clear, that, in practice, the head of the observer must hide any object which is immediately behind it. Besides, Sprat speaks of an instrument to be used at sea, to which purpose there can be no doubt of the single telescope being more peculiarly applicable.

Hooke seems afterwards to have given up the use of reflection. For he delivered a lecture in 1694 on astronomy and navigation, in which he makes no allusion to his former contrivances, but describes‡ another quadrant, on quite a different principle, the invention of which he particularly claims, and the advantages of which he details at considerable length. The method, however, was not abandoned by others. Harrison‖ supposes that Streete's method of finding the longitude was by the moon's motion, in consequence of "his contriving an instrument for taking angles by reflection;" and he adds, "I have seen the instrument; but he could not bring it to perfection, which I gather from those who have had cognizance thereof." Newton, however, by adding the second reflector, devised the means by which the instrument was to be brought to its present state of perfection.

If there were no interest in the subject itself, much would be acquired by its connection with such a man; and it is to be regretted that this inquiry was not instituted to any extent while the events were recent, and could be more fully investigated. The whole possibly cannot now be made out with the clearness which would be desirable, but something may yet be done in getting rid of contradictory dates and unfounded conjectures.

From the minutes of the Royal Society, it appears, that, on the 16th of August, 1699, "Mr. Newton shewed a new instrument, contrived by him for observing the moon and stars for the longitude at sea, being the old instrument mended of some faults; with which, notwithstanding, Mr. Halley had found the longitude at sea better than the seamen by the other methods." This has been supposed to contain the account of Newton's reflecting quadrant; but no one, as far as I have examined, has attended to the precise words of the entry; if they had, the mistake must have been detected. The description evidently applies to some improvement on the old and commonly-used instrument, (which, certainly, at that time did not depend on reflection,) and not to one which was founded on a new and totally different principle. When we come to consider Halley's share in the business, this will probably be still more clear; but, before we go farther, it may be right to guard against an error which the casual reader might be likely to conceive from the concluding sentence. The first impression might be, that Halley had used this instrument of Newton's, but the words will not bear this meaning; the sense, though not perspicuously expressed, must be: "with which (old instrument,) notwithstanding (the faults, that are now mended,) Mr. H. had found the longitude."

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* p. 46, 55, 56.

† p. 57, 58.

‡ Posthumous Works, p. 557, 558.

‖ Idea Longitudinis, p. 50.

All that Newton had devised for the benefit of navigation was not generally known till 1742, when the account of his instrument, in his own handwriting, was found at Dr. Halley's death among his papers at Greenwich. It was accompanied by a drawing, and the construction in its most essential parts was as follows, (see fig. 1, foregoing plate:) "*p q r s*[*] denotes a plate of brass, accurately divided in the limb *p q*. *a b* is a telescope, three or four feet long, fixed on the edge of that brass plate. *g* is a speculum fixed on the said brass plate, perpendicularly, as near as may be, to the object-glass of the telescope, so as to be inclined 45° to the axis of the telescope, and intercept half the light which would otherwise come through the telescope to the eye. *c d* is a moveable index turning about the centre *c*, and, with its fiducial edge, shewing the degrees, minutes, and $\frac{1}{6}$ minutes, on the limb of the brass plate *p q;* the centre *c* must be over-against the middle of the speculum *g*. *h* is another speculum, parallel to the former, when the fiducial edge of the index falls on 00° 00′ 00″; so that the same star may then appear through the telescope in one and the same place, both by the direct rays and by the reflexed ones." The more essential parts are drawn on a larger scale in fig. 2, the same letters applying in both.

The whole of Newton's account, from which the preceding extract is taken, was printed in the Philosophical Transactions. A copy of it was communicated by Mr. Jones, the father of Sir William, who exhibited, but did not deliver,[†] the original to the Royal Society. It is highly probable that it has been somewhere preserved, but where I have not yet been able to discover. The transcript in the minutes of the Royal Society contains no date, and there appears to be no satisfactory evidence of the time when this valuable plan first occurred to its illustrious author. Two epochs have, indeed, been assigned to it, but they both are attended by considerable difficulties.

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[*] Phil. Trans. Vol. 42, p. 155.

[†] Doubts were entertained whether this was a paper that Newton had drawn up for the Royal Society, when he exhibited his quadrant in 1699, or whether he had given it individually to Halley. The executors, therefore, were uncertain whether they were to restore it, or present it to the Royal Society; and, till this could be determined, Mr. Jones wished to preserve it in his own keeping. The consequence, probably, was, that it never reached the place for which it was professed to be destined.

The first presumed date rests on the authority of Stone, who translated Bion's Treatise of Mathematical Instruments, and who added a supplement to the second edition of the work, which was published in 1758. He there mentions Sir I. Newton's paper, from which an extract has just been made, and then adds,* "the very instrument itself that Sir Isaac Newton either made himself, or caused to be made, so long ago as when Dr. Halley went about making the catalogue of the fixed stars in the South Seas, which was in the year 1672, was, not long ago, to be seen at Mr. Heath's, the mathematical instrument-maker in the Strand." Halley was a boy at school in 1672, and did not go to St. Helena till 1676. This inaccuracy about a simple date, which might have been easily ascertained, gives no very favourable impression of the care with which Stone investigated the facts which he reports. Newton's paper does not convey the impression of its having been drawn up to describe what had been already executed. It begins by saying, that a part of the drawing "denotes," not that it "represents," a plate of brass. Not, however, to dwell on verbal niceties, he surely would not have spoken of a telescope "three or four feet long," if its dimensions had been already determined by its having been made. Be this, however, as it may, there is more essential difficulty in the assumption from which this time is deduced. Halley has left us† a list of the instruments which he took with him on the expedition. These were, a sextant of 5½ feet radius; a quadrant of about 2 feet radius, of which he says he very seldom made any use, excepting to get the time from altitudes of the sun; and, lastly, some telescopes of different length, the longest being 24 feet, which was furnished with two micrometers. Now, Newton's was an octant, and of larger dimensions than the quadrant here described, which, moreover, was an old one, ("quo olim usus eram.") It is clear, therefore, from Halley's own account, that he had no instrument at this time like that with which Stone has gratuitously furnished him. This will be still more strongly confirmed (as far as negative evidence can go) to any one who reads what Halley says, at the end of the preface, on his observations of the moon.

The second account is probably much nearer to the truth. Sir D. Brewster, in his life of Newton,‡ says, "the description of this instrument was communicated to Dr. Halley in the year 1700;" and this is the date adopted by most of the best writers on the subject. It may, however, be allowed to state some reasons for doubting its certainty. The earliest original authority on which it appears to rest is a note in the introduction which Wales prefixed to his Astronomical Observations, (1777.) Having given several curious particulars respecting Hadley's quadrant, he says,[*] "Since writing the above, I have been informed, that, at the time when Mr. Hadley's paper was read, Dr. Halley did declare he had one of Sir Isaac Newton's, describing an instrument similar to Mr. Hadley's, and which was given him in 1700 or 1701, but that he did not then know where to find it." There is, however, obviously, a mistake in this account. From the records of the Royal Society it appears, (1731, May 20,) "upon reading the minute concerning Mr. Hadley's instrument for taking altitudes," (probably angles,) and measuring altitudes by means of double reflection, Dr. Halley observed, that Sir I. Newton had formerly invented an instrument for the same purpose, founded on the same principle of a double reflection, and that he had communicated some account of it to the Society in the year 1699." It is clear, therefore, that Halley's date referred to the instrument which has been mentioned to have been really exhibited to the Society in the year which is here stated, and not to the paper describing the other invention.

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* p. 268.

† Catalogus Stellarum Australium, pref. p. 4.

‡ p. 308.

Dr. Halley's conduct upon this occasion has never been rightly understood: it may therefore be permitted to enlarge on some particulars to which I alluded[†] in a former communication. Whether my own view of the transaction be accurate or not, is a matter quite of secondary importance; but it is right that the facts should be stated as far as they have been ascertained, and that every one may have the means of forming his own opinion.

In consequence of Dr. Halley's assertion, search was made in the minutes of the Royal Society, and, on May 27 (the following week) Dr. Mortimer reported that the account had been found, of what Sir I. Newton had exhibited on the 16th of August, 1699; and he adds, "it does not appear by the said entry to be an instrument made upon the same principles with Mr. Hadley's, there being nothing particularly expressed concerning the construction of it, so as to give any light or direction to know what it was, any more than, in general, some improvement of the common quadrant used at sea."[‡] The minute of August, 1699, has been inserted in a former part of this paper, and, if the arguments there used are just, they confirm Dr. Mortimer's conclusion. But this is not all; for, 1731, Dec. 16, "Dr. Halley took occasion to say, that he had considered the construction of Mr. Hadley's new-invented instrument for making astronomical observations on board a ship; and he was now well satisfied that it was much different from that which Sir I. Newton had formerly invented for that purpose, and communicated to the Society."[‖]

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[*] p. xxxii.

[†] Naut. Mag. Vol. I. p. 352.

[‡] Minutes of the Royal Society.

[‖] Ibid.

It will be observed, that there was an interval of seven months between Dr. Halley's assertion and his retraction. He must, therefore, be considered in the second instance as giving the more mature and deliberate opinion. There is, indeed, a seeming contradiction, but it may be fairly accounted for, if we bear in mind how much stronger an impression is made upon our minds by things which we have actually seen, than by those which we only had described to us.

If Newton's paper was ever acted upon, (and the inaccuracy in the rest of Stone's report destroys all confidence in what he says on this head,) we have at least no evidence of Dr. Halley's ever having had the instrument in his hands; whereas, immediately after Newton's exhibition of his quadrant in 1699, Halley "shewed the several variations of the needle he had observed in his voyage, set out in a sea-chart." It is clear, therefore, that he must have had the opportunity of examining the actual construction of what had just been previously shewn to the Royal Society. It would appear, therefore, that Hadley's invention in 1731 recalled the idea of Newton's paper to Dr. Halley's mind, but that the recollection of it was not sufficiently strong to distinguish it from what had occurred in 1699; that, referring both circumstances to one date, the quadrant which we know that he had seen recurred most strongly to his imagination, and, as it was different from Hadley's, he gave up Newton's suggestion of double reflection as a fallacy of imperfect memory. This explanation is at least much more probable than the possibility (which some have suspected) of his being guilty, wilfully, of suppressing the information which he possessed. Dr. Halley was not a time-serving man, and it would be hard to devise any motive for his sacrificing the claims of his illustrious friend. It must be remembered that we owe to his exertions[*] the publication of the original edition of the Principia, and his first immediate suggestion on the communication of Hadley's paper, shews that he was alive to the maintenance of that fame which he had laboured in earlier life to promote. Finally, if he could have been guilty of any thing so revolting to all good feeling and principle, he surely would have destroyed the evidence of his dishonesty: he might have done so completely, for no one seems to have been aware of the contents, nor even of the existence, of Newton's paper, till it was accidentally found in 1742.

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[*] By referring to Sir David Brewster's Life of Newton, p. 154—157, it may be seen how much we are indebted to Halley for the possession of the Principia; to which may be added a passage from Birch's History of the Royal Society—it is a minute of the council—Vol. iv. p. 486. 1686, June 2, "ordered, that Mr. Newton's book be printed, and, that Mr. Halley shall undertake the business of looking after it, and printing it at his own charge, which he engaged to do." It is hardly possible to conceive that the Royal Society, after undertaking to publish the work, could, either from deficiency of funds, or any other cause, have thrown the burthen of it upon Halley. But the minute is unintelligible, if it does not imply that he either engaged for some positive expense, or gave up some serious remuneration, to which he would have been justly entitled in the prosecution of the publication.

Dr. Halley published an appendix to Streete's Astronomia Carolina, in which he gave a number of observations of the moon, that he had made in 1682-3-4, and says, "In the remote voyages I have since taken to ascertain the magnetick variations, they have been of signal use to me in determining the longitude of my ship, as often as I could get a sight of a near transit of the moon by a known fixed star."* It is remarkable, that he speaks only of appulses, and not of the general method by lunar distances, for which Newton's instrument was especially intended. This may be admitted as a proof of his not having had the use of this instrument in his later voyage, but it is not conclusive against his having had the paper before the time of his publication, (1710.) The invention possibly did not make so strong an impression as it ought upon his mind. A sheet of brass, three or four feet in radius, and thick enough to preserve a plane figure, would have formed an instrument which was unmanageable for sea service; and Dr. Halley may have lost sight of the excellence of the principle, in the difficulties which attended the proposed method of carrying it into practice. Newton himself, however, was too clear-sighted, and too considerate, not to have discerned the superiority of the plan; and it is fair, therefore, to conclude that it was posterior in time to his other quadrant of 1699. It is well known that he felt no anxiety for the publication of his inventions; he left to others the care of storing up "the smoother pebble, or the prettier shell,"† which he found on the shore of the great ocean of truth. We must not wonder, therefore, if he gave the description to his friend, and never troubled himself any further about it. From the confusion in Dr. Halley's mind between this paper and the exhibition to the Royal Society, it seems not improbable, that the one was not long subsequent to the other; but this must be owned to be a very vague conjecture.

I shall rejoice if any one more persevering and more fortunate than myself, may be able to settle this interesting point in scientific chronology; but I am afraid, that, if the date had not previously passed from Dr. Halley's recollection, (which is most probable,) the knowledge of it must have perished with him.

(To be continued.)

V.—MEMORANDA AND DIRECTIONS FOR TIDE OBSERVATIONS.

By the Rev. W. Whewell, M.A., F.R.S., Fellow of Trinity College Cambridge.

TIDE OBSERVATIONS may be of use either as *Continued Observations at the same place*, or as *Comparative Observations at different places.*

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* p. 69.

† Brewster's Life of Newton, p. 338.

I. The use of *Continued Observations of Tides at the same place* is to determine the dependence of the time, height, and other circumstances of high and low water upon the places and distances of the sun and moon.

Particular tides are affected by considerable anomalies and uncertainties, but in the *averages* of a long series of observations, general rules, consistent with theory, prevail with great constancy. The object of observation should be to verify these rules, and to determine the constant quantities which enter into them.

For this purpose we have to attend to

1. *The Establishment of the place.*

The interval at which high-water follows the moon's meridian passage or transit at a given place varies from day to day, (being affected by the semimenstrual inequality.)

The *Vulgar Establishment* is the duration of this interval on the day of new or full moon.

The *Corrected Establishment* is the *mean* duration of this interval.

2. *The Law of the Semimenstrual Inequality.*

In the mean state of the parallaxes and declinations of the sun and moon, the interval at which high-water follows the moon's meridian passage or transit is affected by an inequality depending on the moon's distance from the sun, and going through all its changes in half a lunation: this is the *Semimenstrual Inequality.*

This inequality is, theoretically, the same at all places; and, therefore, in simple tides, at every place, the law and amount of the inequality of the interval of tide and moon's transit during a half lunation is the same.

It is desirable to verify this rule; and, if exceptions occur, to examine the circumstances of them.

3. *The Age of the Tide.*

The *circumstances* of each tide do not correspond to the places of the sun and moon at the time of that tide, but at a time one, two, or three days earlier; this distance of time is called the *Age of the Tide.*

Two such circumstances may be especially noted:

1°. The spring-tide, or *highest* high-water, is not on the half-day of new or full moon, but at a certain tide on some later half-day.

2°. The interval of tide and moon's transit has not its *mean* value on the half-day of new or full moon, but for a certain tide at some later half-day.

The distance of time from the new or full moon to the time when the interval of tide and moon's transit has its mean value, is the *age of the tide.*

4. *The Diurnal Difference of the Tides.*

It appears from theory, that, in simple tides, there should be a difference in the height of the two high-waters on the same day: in such cases, during one part of the year the morning tide, during another part the evening tide, is the higher.

It is desirable to verify this *Diurnal Difference*, and to determine its amount at particular places.

5. *The Peculiarities of Tides at particular places.*

At many places the tides are compounded of two simple tides, which arrive by different paths: this composition may give rise to new circumstances.

For instance, the Diurnal Difference may be obliterated; or it may be accumulated so as to produce only one tide in 24 hours.

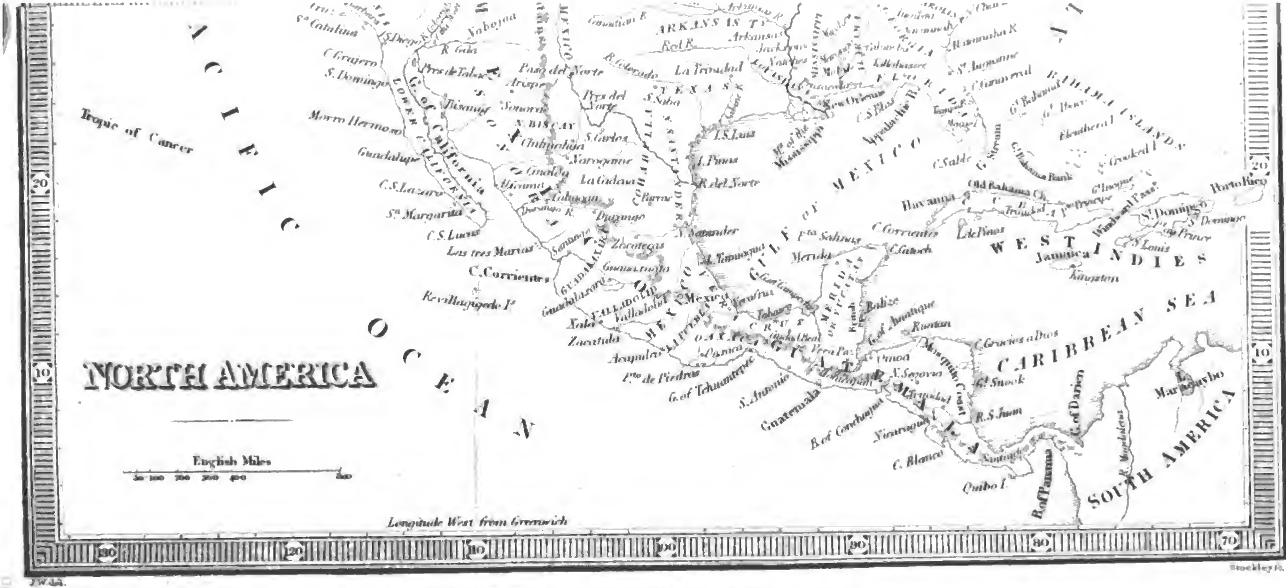
6. *The Effect of the Changes of Parallax and Declination of the Sun and Moon.*

These changes may affect both the height and the time of high-water. Their effect can only be detected by a considerable series of good observations, carefully discussed.

I shall now explain somewhat more at length the subjects above referred to.

Continued Tide Observations at the Same Place.

If our theoretical knowledge of the tides were complete, we should be able to calculate good and exact tide-tables for any place, merely by knowing the time and height of the tide on one single day. This, however, is what we are at present very far from being able to do. Besides the obvious irregularities arising from winds and weather, there are many permanent anomalies, which no theory has yet explained, and to which we do not know how to adapt our tide-tables. One consequence of this is, that the tide-tables which are very good for one place are not exact when they are accommodated to another place; and mathematicians have not yet learned to make accurate and trustworthy tables for any place, without having a long and careful series of observations *made at that very place.* Tide-tables, indeed, are every year published, in which it is asserted that the tides of one place are later than those of another by the same interval every day; but this is very inaccurate as a general proposition. London, Liverpool, and Brest are the principal places for which original and independent tide-tables have been in this manner constructed; and the tide-tables which are published for other places are generally calculated from these. But though the rules which the tides follow at these different places are not exactly the same, they are very nearly so; and if we knew as much



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Published for the Proprietors of the National Magazine by Fisher, Son & C.o 1843.

about the course of the tides at a good number of other places as we do at these, we should probably obtain some general rules which would shew how the tide-tables at one place ought to be related to those at another place. Such general rules would not only be of practical use in the construction of tide-tables, but they would also help us to improve and modify the theory of the tides, and would thus be important contributions to the highest department of science. These appear to be very sufficient reasons for desiring to have "continued tide observations at the same place" carried on and recorded in a great number of instances.

Comparative Observations at Different Places.

Continued observations at the same place are connected by relations of *time;* comparative observations at different places are connected by relations of *space*. The former relations have been made the subject of theory, however imperfectly: the latter have not; and it is hardly possible that they ever should be reduced to calculation, considering the extreme complexity of the circumstances on which they depend, namely, the form of the shores, and the bottom of the ocean, and the motions of the whole mass of waters contained in this irregular and ramified cavity. But, though the connexion of the tides in different places cannot be *calculated*, it can be *expressed*, as well as the connexion of successive tides at the same place. The connexion of successive tides is expressed by tide-tables, or rather by the rules from which such tide-tables are formed; the connexion of contemporaneous tides is expressed by means of a map of *co-tidal lines;* that is, a map of lines connecting places which have coexistent tides. I have endeavoured to construct such a map, and the attempt is published in the Philosophical Transactions for 1833. In proportion as additional "comparative tide observations at different places" are collected, it will be possible to extend and improve this map.

(To be continued.)

ARCTIC EXPEDITIONS.—RETURN OF CAPTAIN ROSS.

WHERE'S Captain Ross? Off Cape Farewell, said one party:—In the middle of an iceberg, said another:—At the bottom of Baffin's Bay, said a third:—or, Food for the Polar bear, said a fourth: while some, who probably knew more about the matter than the rest, indulged, with good reason, the hope that he and his followers had yet withstood the severe effects of the arctic winters to which they had been exposed, and were safe in their dreary solitude. Such has been the general question, and such, among others, the various conjectures on the probable fate of this adventurous officer and his companions, in their long absence; until at length a party, under the direction of Captain Back, was despatched, to rescue them, if possible, from their forlorn situation. In the midst of our anxiety as to the ultimate success of Captain Back, and when he has just reached the ground from whence his interesting search is to commence, behold Captain Ross himself, and his little band of hardy fellows, the objects of all our solicitude, appear among us! The first account of their safety was received in a letter from the agent to Lloyd's at Peterhead, dated the 12th of October, the intelligence having been brought home by the Clarendon whaler from Davis Straits; and we had scarcely time to recover from our surprise, or to doubt the welcome news, when Captain Ross landed at Hull from the Isabella, and on the 20th reported himself at the Admiralty, receiving every where the sincere and hearty congratulations of his countrymen. No satisfaction was ever more general than that occasioned by the safe return of the travellers; every heart was gladdened by feelings of humanity, and, whether discoveries of a scientific kind had been achieved or not, all rejoiced that he was come home.

We do not anticipate that the geographer will add much to his store of knowledge from the result of this voyage, as the course of the Victory, the vessel in which Captain Ross sailed, was impeded to the westward by the western shores of Prince Regent Inlet. Our readers, however, will be better able to judge for themselves hereafter, when Captain Ross's narrative is published by Mr. Murray, and in the mean time we shall endeavour to convey to them some idea of the track which he appears to have followed. For this purpose we shall avail ourselves of the little map accompanying our present number, on which we have inserted a green and a red track, the former being nearly that of Captain Ross, and the latter that of Captain Back in search of him.

It will be remembered that Captain Ross left England in the summer of 1829, in order to discover, if possible, a passage to the westward through Prince Regent Inlet, towards Bhering's Strait, and thus to achieve an exploit which has been the aim of many celebrated navigators. This appears also to have been Sir Edward Parry's favourite theory in the voyage after returning from Melville Island, when the Fury was lost on the western shore of the inlet, the extremity of the red line on the map. The last accounts of Captain Ross (that have reached England, for we believe he has written every Christmas, during his absence, to his friend Sir Byam Martin,) were dated in July, 1829, from Disco Island, in Davis Strait. From thence the passage to Prince Regent Inlet, the navigation being entirely open, only occupied till the 13th of August following. All remains of the Fury's wreck, it appears, had been drifted away by the ice; but her provisions, which had been deposited on shore, and her boats, were found in good condition. Having availed themselves of the former, our voyagers continued to the southward, along the west shore of the inlet, as far as Cape Garry, from whence they still continued to the S.W. and west, until they reached the latitude of 72° N. in long. 94° W. Here their progress was first stopped by the ice, which appears to have accumulated at the entrance of a small inlet leading to the west. This inlet was not left unexamined, two days being employed in exploring it without success. No passage through it being found, Captain Ross continued his voyage to the southward, keeping as close to the western shore of Prince Regent Inlet as the shallowness of the water would allow him. We are told, that he frequently landed for the purpose of taking possession of it, with the usual ceremony on such occasions.

From the above inlet much difficulty was experienced in getting to the southward, owing to the rapidity of the currents, the quantity of ice drifting about, and the rocky nature of the coast. At length, in lat. 70° N. from the longitude of 92° W. the land took an easterly direction as far as 90° west, where, on the 1st of October, 1829, the further progress of the Victory in her dangerous voyage was finally arrested. A harbour was found in the above position, in which the Victory was safely placed, and afforded, as Captain Ross observes, an excellent wintering port. Our readers are probably aware, that the Victory was purchased and fitted out for Captain Ross by his liberal friend and patron, Felix Booth, Esq., and the name of Felix was appropriately given to this harbour.

Our travellers were not long by themselves in their new quarters, for in January, 1830, a party of Esquimaux became their companions, and with these natives of the soil a friendly intercourse was established. In the course of the winter it was ascertained from them, that there was no channel by which a vessel might pass to the westward, but that a narrow neck of land separated the eastern from the western sea. The utmost solicitude seems to have been entertained by Captain Ross on this point, and consequently the whole summer of 1830 was employed in verifying their report. The neck of land was crossed by Commander James Ross, who then continued along the shore to the westward, and reached the meridian of 100° W. in the latitude of 70° N., from whence he considers that the land takes a south-westerly direction to Cape Turnagain, the eastern point of Coronation Gulf. The shore of the isthmus was also traced to the north-west, by which, with the shore to the southward, a gulf is formed. By the survey of Commander Ross it is ascertained, that the Great Fish River does not fall into the arctic sea where it was supposed, and we must therefore conclude, for the present, that it terminates in Coronation Gulf.

All hopes of getting to the westward being at an end, attempts were made to get to the eastward. But in consequence of the unfavourable state of the ice, the Victory was moved only a few miles from Felix harbour, in the middle of November, and again secured in a harbour called Sherriff's harbour. This second winter (of 1831-2) is alluded to by Captain Ross as being one of uncommon severity. The thermometer is stated to have fallen to 92° below zero, and the average temperature of the year was 10° lower than the preceding. The summer of 1831 appears to have been employed in examining the northern shore of the above gulf, and we have no doubt that much valuable information connected with magnetism and natural history has been collected by Commander Ross in these excursions. In October, 1831, the Victory was again moored fourteen miles to the northward of her last position, and placed in a harbour, to which, with her name, she has bequeathed her remains. Another dreary winter was passed by the voyagers on board their vessel, when their stock of provision became so much lessened, that notwithstanding the supplies of foxes, bears, blubber, and sea-birds, that were occasionally added to it, the resolution was formed to abandon the Victory, and proceed to Fury beach early in the following summer, for the purpose of obtaining the provisions left there.

It may here be observed, as this seems the furthest point attained by Captain Ross, that from the longitude of 90° west, in lat. 70° N. the land took a decidedly east and west direction, after turning, we presume, to the southward, and that further land was seen to the southward distant 40 miles, considered by Captain Ross to be the continent of America, and which was connected with that forming the south shore of Prince Regent Inlet. The land seen to the southward appeared to trend towards Repulse Bay, (marked green in the map,) to the northward of Wager river. The whole of this land, with the isthmus and peninsula, forming the western side of Prince Regent Inlet, was named Boothea, and the sea to the southward was called the Gulf of Boothea.

Early in the spring of 1832, small supplies of provisions and fuel were deposited on the way the party had to pass to Fury Beach: a precaution which lightened their burdens, and enabled them to reach it on the 1st of July following. The journey is described as being perilous and fatiguing in the extreme; the whole party being now on foot, and therefore frequently obliged to adopt circuitous paths to avoid danger from the ice, thus materially increasing their distance. The Victory had been abandoned in her own harbour, being immoveably fixed in the ice, and of no further use to the voyagers. It is well known that she was ill adapted for the service; and we understand that her steam machinery had been displaced, and that she was converted into a sailing vessel long before she reached her first harbour. She now lies in Victory Harbour.

Having with much difficulty regained Fury Beach, the party immediately proceeded to repair the boats of this vessel, and to construct a temporary hut, as they had no longer their vessel to afford them shelter; and hopes seem to have been entertained, that by means of the boats they might reach Lancaster Sound before the whaling ships had left for the season. It must therefore have been painfully distressing to them to be locked up by the stubborn ice till the 1st of August, before they could move with the boats. On that day, however, they left Fury Beach, and, passing along the western shore of Prince Regent Inlet, arrived at Leopold Islands (the northern extremity of Cape Clarence in the map) on the first of September. If their situation on Fury Beach had been distressing to them, how much more so must have been their present! To recognize their way home; to see the strait through which they had passed, formed by continuous headlands on either side, gradually lessening in perspective; to find the channel which had before been open and navigable, now covered with one impenetrable mass of ice, defying their puny efforts to pass it, must have been galling indeed to their feelings. Such anxiety and suspense, as Captain Ross says, may be easier to imagine than describe, when experienced by persons with whom it might be matter of life and death.

Disappointed in their hopes of escape, the party were compelled, by the departure of summer, and the want of provisions, to return to Fury Beach, where another dreary winter, that of 1832-3, was passed still more wretchedly than the preceding. Their dwelling consisted of a frame of spars covered with canvass, and, being covered besides by the snow that fell, we have no doubt was as warm as such a one could be in polar regions; but the want of clothes, of bedding, and animal food, served to render *Somerset House*, as we find this shanty was called, a very different abode from the present second Admiralty!* But after a long and tedious winter, last summer released the travellers from their wearisome captivity, and strenuous exertions were made by all to avail themselves of a channel through the ice in the month of August. The former position at the entrance of Prince Regent Inlet was gained in two days, and on the 17th the party crossed over the inlet to its eastern point. On the following day they gained Admiralty Inlet, in Barrow Straits. (See the map.) On the 25th of August, the travellers crossed Navy Board Inlet, the next to the eastward; and on the 20th, their long-looked-for deliverance was at hand. Captain James Ross discovered a sail in the offing, but, mindful of not disappointing the rest on a matter of such importance, he carefully scrutinized her with his glass until he assured himself of the fact, and then gave the joyful intelligence to the party. The weather befriended the travellers; the ship approached them; and as she drew nearer, the party made for her in their boats. She proved to be the Isabella of Hull; and, with feelings of joy and gratitude for their deliverance, they were received on board of her, by Captain Humphrey and his crew, with as hearty a welcome as British sailors *can* give. There may at first sight appear something strange in the coincidence of this ship being the same Isabella that Captain Ross had commanded in 1818; but we are inclined to believe that no small share of praise is due to Captain Humphrey for penetrating so far up the strait as to give the Captain a chance of seeing his old ship. Their number had been lessened by three, which Captain Ross is of opinion was not to be attributed to the effects of the climate; but there can be no doubt that their sufferings were increased by the privations which they had undergone.

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* The land forming the western shore of Prince Regent Inlet was named North Somerset by Sir Edward Parry.

Let us now turn our attention to Captain Back, who, (although it may be said of him, that he is in search of a shadow, with regard to Captain Ross,) if we are not mistaken, will return to us with substance in the shape of much useful information of another kind. We may first premise, that tidings have been sent out to him of the return of Captain Ross, with directions to follow up the secondary objects of his expedition. Whether the messenger can reach him before he departs from his winter-quarters next spring, we are rather doubtful, as winter travelling is not so expeditious as that of summer. We shall, however, give our readers a brief outline of the route he adopted.

On the 17th February, Captain Back sailed from Liverpool in the Packet Hibernia, for New York, where he arrived after a short voyage. His reception there was gratifying to his feelings, and honourable to the citizens of New York. The interest which they felt in the success of his undertaking was evinced by their attentions to him during the very short time he remained among them. We hear that "so much did the feeling in his favour pervade all classes, that the steam-boat company to which the vessel belonged, and in which he proceeded from New York to Albany, refused to accept payment for his passage or provisions." From New York he immediately proceeded by the Hudson and Lake Champlain to Montreal, where, as might be expected, he was cordially received, and his mission enthusiastically encouraged. Hitherto he had been accompanied only by Mr. King, a gentleman who had left England with him as surgeon to the expedition. A short interval was passed at Montreal in providing a canoe with men; and, after the necessary arrangements being concluded, he left that place on the 25th of April. From Montreal he ascended the Ottawa River, and proceeded by Lake Huron to the rapids of St. Mary, at the outlet of Lake Superior. These rapids are called in the country "Sault St. Marie." They are sometimes called the "Falls of St. Mary."

By letters received from him, it appears that he arrived there on the 12th of May, only eleven days later than had been anticipated on his leaving England.

The rapids of St. Mary were formerly the resort of numerous families of Indians at a certain season of the year, a great number of fish being taken there. It was there, also, that "councils" were held by the fir-traders with the Indian chiefs; but, of late years the number of these people has been much reduced, owing, probably, to a part of this trade finding its way home by Hudson's Bay. The distance from Montreal to the St. Mary rapids is considered about a thousand miles, which journey was performed by Captain Back in twenty-one days.

Pursuing his course from thence, Captain Back continued the usual route along the north coast of Lake Superior; and, by accounts received of him, he passed the great bay of Michipicoten on the 15th of May. This is one of the points on Lake Superior from whence the communication is carried on with Hudson Bay. A trading-post is established there, on the shore of a deep bay, and the canoes, on their way up the lake, endeavour to cross the mouth of it, by which means they materially shorten their distance. This method, called by the Canadians, making a "traverse," is frequently attended with danger, arising from the wind and sea, which their canoes are ill calculated to withstand. The traverse from Cape Gargantua to Michipicoten Island, in the mouth of the bay, is about twenty-five miles, and is one of the most dangerous on the lake.

The northern shore of Lake Superior presents some of the wildest and finest scenery imaginable. It is a bold rocky coast, formed of granite, porphyry, and greenstone, rising in many parts to the height of a thousand feet above the level of the lake, and indented by deep bays. The Thunder Mountain, near the mouth of the Kaminitiquoia River, formed of green stone, rises to the height of 1350 feet above the lake, according to the survey of Captain Bayfield, R.N. And the water of Lake Superior, as if to coincide with the general *superiority* of this lake over the rest, in point of magnitude and beauty of scenery, is even purer than that of the others. This is accounted for by the bed of Lake Superior being principally of rock, and the waters of the lower lakes, Erie and Ontario, being impregnated with decayed vegetation, and the deposit brought from the adjacent country by the rivers which fall into them. The difference in the purity of the water is easily perceptible, as they are all connected with each other; and, commencing with Lake Superior, which is the purest imaginable, a shade of difference may be observed gradually increasing in each.

The southern shore of this lake is principally resorted to by Indians, for the purpose of fishing. It is of a totally different character from the northern, being formed of sandy beaches and low cliffs. The northern shore is little frequented by them, unless it be for the purpose of visiting the trading posts. We remember once, when making the passage along this shore, between Fort William and St. Mary's, our attention was suddenly attracted by something of a reddish appearance waving in the wind among the stunted fir-trees, on a bold projecting point of granite. The point was not very high, but the water was deep enough to let a line-of-battle ship rub her sides against it. Our Canadian voyagers quickly perceived what it was, and pulled for the shore, while we were speculating on what it might be. As we approached the point, we found it was the paddle of a canoe, with some red garters, suspended over a pile of stones. Our curiosity was still unsatisfied respecting the eagerness of the Canadians to land for a paddle; and it was not until we had gained the point, that we found the pile of stones was the grave of an Indian chief. Immediately, several of the canoe-men jumped on shore, and, making their way up the point, commenced opening the pile, which was about twelve feet high. It was not long before they reached the corpse of the chief, deposited at the bottom, wrapped in birch-bark, with his gun, a little tobacco, some beads, and stained porcupine's quills, placed by its side, in separate pieces of bark. According to its appearance, the corpse had lain there some months: it was placed on its side, with the legs doubled, and was an unsightly object. We now found out that it was for the sake of the gun that our men had been so anxious to land, and, accordingly, the one here found was taken possession of by our steersman, who had been the foremost to obtain the plunder. It appears to be a common custom of the Canadian voyagers, knowing the habits of the Indians, to search their graves on all occasions, for the purpose of carrying off whatever may be worth the trouble; but they are careful to do so unobserved by them, and to leave the outward signs of a grave, until some less scrupulous take them away as they pass by.

To return to Captain Back: having arrived at Fort William, an establishment of the Hudson-Bay Company, on the left bank of the River Kaminitiquoia, at its junction with Lake Superior, it was his intention to exchange his canoe for two north canoes, and proceed up that river, through the celebrated Muddy Lake, and the Lake of the Woods, into Lake Winipic. The canoes generally used between Montreal and Fort William are called *canots de maître*, being large, and equal to the rough weather on the great lakes through which they have to pass; but, being also heavy, and therefore ill adapted to the river navigation, after leaving Lake Superior, are substituted by lighter ones, called "North" canoes. These are carried over the numerous *portages* (or breaks in the navigation, caused by rapids, or falls, occurring in the river, or from one river to another) by their crews with more facility, and are reserved purposely for the country north of Lake Superior.

The water of Muddy Lake, above mentioned, which is not more than a mile or two in breadth, has a remarkable quality of retarding the passage of a canoe through it. Sir Alexander M'Kenzie observes, that "he found it very difficult to get away from this attractive power" of the water, great exertion being required to overcome it. According to our recollection, this lake has only a very trifling outlet, and, surrounded on all sides by dense woods, the water becomes nearly stagnant. It is full of a small weed, from which, and the muddy nature of its bottom, it assumes an unwholesome and slimy consistency, and hence arises the difficulty of crossing it in the birch canoe. In vain the Canadian boatmen apply their whole strength to the paddles, the slimy water clings to the round bottom of the canoe, while it stubbornly refuses to accelerate its pace, or even to stir more than a yard or two at a time. After the toil of getting across it is over, they gladly rest themselves on the opposite bank, and prepare for the *portage*. After all, there is something very remarkable in the water of Muddy Lake, and that it should alone possess this singular quality. The soil about it is of a soft alluvial nature.

Further accounts from Captain Back state, that he arrived with his party, in good health, at Fort Alexander, a trading post close near the southern part of Lake Winipic, on the 6th of June, and was found there by Mr. Simpson, the Governor of the Hudson Bay territories, on the 10th of that month. From Mr. Simpson, Capt. Back received a *carte blanche* on the Company's establishment, along the whole line of communication to the Great Slave Lake, for such assistance and supplies as he might require for three years And it was Mr. Simpson's opinion that Captain Back would be able to reach the coast, and to return to winter-quarters before the close of the navigation.

The following letter, the first received from Captain Back, informs us of his proceedings as far as the northern part of Lake Winipic, and it is remarkable, that this letter should have been received only two days before the intelligence of Captain Ross's safety arrived.

"*Norway-house, Jack River, June* 19, 1833.

"My dear M.—I wrote to you last, I think, from Montreal; since which I am happy to inform you my progress has been unimpeded by accident, though attended with more expense than it was possible to foresee. On arriving at the Sault St. Marie, (I love the name,) which we effected ten days earlier than the light canoe of the last season, we were informed that there was such a deficiency of provisions in the Indian country, that it would be necessary to take a supply at once as far as Lake Winipic. This obliged me to purchase another canoe, to get across Lake Superior, and from that establishment I received the two north canoes prepared for the expedition by the Company.

"We arrived at Fort Alexander on the 6th of June, which, for heavy canoes, is considered as being remarkably quick, the despatch canoe from Montreal having only got there one day earlier. The letters that you and I saw at the Hudson's Bay House, in December last, together with others of mine to Governor Simpson, were in that canoe, and consequently but a short time before me. I had thus to apprehend that the arrangements relating to the expedition could not have been completed, from the want of the necessary information; and, therefore, the importance of seeing the Governor myself was evident, and on the 10th of June I had that pleasure at Fort Alexander. I then heard that the supplies were nearly all at Cumberland-house; but, as we could not by any exertion procure the men required for the expedition at Montreal, it was necessary for me to come to this post to complete their number. And now, I am sorry to say, we are obliged to pay very high wages; besides which, I have lost full 300 miles by this delay, unavoidable in itself.

"It is the opinion of the senior gentlemen here, then, that the only method we can adopt to get my two large heavy boats to a wintering ground, is for me to go on in a light canoe myself, and find out the exact situation and the best route to the Thloo-ee-cho, which I hope to do by the time the boats arrive at the Athabasca, where there shall be a guide to conduct them to me. Now, my dear friend, though I must do this to insure my operations next year, yet it will swell our expenses to more than I contemplated; and you cannot conceive how feverish I am at the thought of getting beyond the 7000*l.*, for it is certain this sum will scarcely carry us to the three years, whereas an additional 1000*l.* would be amply sufficient. Pray see, then, what can be done, and make me quiet about this.

"I am now in the midst of bustle and annoyance—hiring and persuading men to go. I shall write again by the ship. On this occasion, you are the only person in England to whom I purpose writing, therefore make my kind regards to all my friends, and especially to those who have been active and are interested in our good cause. "Yours ever,

"GEORGE BACK."

"King is very amiable, and will make a good voyageur."

From Jack River, which falls from the east into Lake Winipic at its northern extremity, Captain Back would proceed to Cumberland House on the river Saskatchewan, where a supply of pemmican would be obtained, and the canoes exchanged for two boats. At this place, various articles would be supplied him, as presents for the Indians. Pemmican is made from the best flesh of the buffalo, cut into thin strips, and dried by the sun. It is then mashed into a sort of powder, and, being mixed with some fat of the animal, is packed as closely as possible into bags made of deerskin. By this means it is secured from the action of the atmosphere, and will keep good for more than a year. It is a nutritious, but not a very palatable kind of food, except where no other is at hand. The plan which Captain Back appears inclined to adopt, will then be, to proceed on alone in a light canoe through a series of small lakes and rivers, which will give him much trouble to pass over, until he reaches the Elk river, by which he will descend into Lake Athabasca—erroneously written "Athapescow" in the map. He will there arrive at Fort Chipewyan, another establishment of the Hudson Bay Company at its western extremity, where it was intended that he should receive a further supply of pemmican. It is this fort to which Captain Back alludes in his letter, where he says, that he will leave a guide to conduct the boats to his winter-quarters. Leaving the Athabasca lake, Captain Back would pass by the Slave river into the Slave lake, the furthest extent to which he would follow the former routes of Sir John Franklin.

We may now consider this enterprising officer and his party, as having reached the most interesting portion of their long and tedious journey; and we trust that the intelligence of Captain Ross's safety may reach them in their present winter-quarters, somewhere near the Slave Lake, before they start on this the most arduous part of their journey, and thus timely prevent a waste of their resources in endeavouring to reach Fury beach. The safety of Captain Back and his party would now become a source of some uneasiness, were we not satisfied that he will take those precautions which his experience in that country will suggest. What his course may be in the ensuing summer, it is impossible to foresee. Were we to venture an opinion it would be, that he will find his way down the Great Fish River to Coronation Gulf, and from thence to Point Turnagain. From thence he will continue along the shore of the arctic sea to the extreme point reached by Commander J. Ross,* and thus connect the parts now discovered with that which has been already completed to the westward as far as Point Beechey.

The adventures of Captain Ross and his party during their tedious and eventful absence, we have no doubt will form a most interesting narrative. The work, as well as the maps belonging to it, are in course of preparation, to take their place among those records of daring intrepidity displayed in the polar regions, that have now been more than equalled; and we hope that those rewards which were bestowed on some of the more fortunate of Captain Ross's predecessors, may still be awaiting him, whose very existence but a few short days since was considered by some as doubtful, and by others as improbable. But it should not be forgotten in reference to former expeditions of this kind, that the present one has cost nothing to Government, and that the gallant leader not only ventured his life, but his property, in the cause he had espoused. Some more substantial reward than mere rank is therefore in justice due to one who has thus sacrificed all he possessed in his exertions to maintain that high name for enterprise and discovery, that signalizes his own among surrounding nations—a name that has been well earned in the arctic regions by the spirited perseverance of her bold and adventurous seamen.

* We understand that this officer has been promoted since his return.

LITERARY AND SCIENTIFIC NOTICES.

BOOKS.

The American Coast Pilot, containing directions for the principal Harbours, Capes, &c. of the Coast of North and South America, &c. By E. M. Blunt. New York. Twelfth Edition.

Among the various works of this kind, there is not one, perhaps, that contains a greater mass of useful information than that which is before us. And we know that former editions have been generally prized by navigators, in consequence of the valuable intelligence with which they were stored. On comparing the present with the former edition, we find additions and improvements of no ordinary kind. Several new plans resulting from partial surveys are introduced, with sailing directions; and, in particular, the southern part of the dangerous shoal of Nantucket has been ascertained by survey. We are concerned to see that the editor of this useful work, after forty years passed in bringing this work to its present state of perfection, resigns his labours with the present edition. There is yet a great deal for investigation on the coasts of the United States, and we trust that the future editor will complete the good work which his predecessor has so ably begun.

The History of Arabia, Ancient and Modern, with a comprehensive view of its Natural History; in two volumes; by Andrew Crichton. Edinburgh, Oliver and Boyd.

Our notice of these little volumes must be more limited than we had intended. As a work giving a general view of the history of a country in the various stages of its government, and marking the great events with their consequences, without dwelling too much on fabulous detail, we consider the present as well adapted for young readers. We have had occasion to speak in favourable terms of the former numbers of the Edinburgh Cabinet Library; and, assuredly, had we to fit out a boy for the sea, and intended to supply him with general information, on a small scale, of the countries he was likely to visit, we should certainly select for that purpose the several volumes of this useful little work.

CHARTS.

A Chart exhibiting the Light-houses and Light-vessels on the Coasts of Great Britain and Ireland, and also those on the Coasts of Europe, between lat. 47° and 59° N., and long. 6° W. to 17° E. *Laurie, Fleet Street.*

This chart, which is published by order of the Hon. the Corporation of the Trinity-House, is valuable, as a reference to the various lights at present established on the coasts included by it. These extend on the north to the island of Oland, in the entrance of the Baltic, with the coasts of Sweden and Norway, as far as Skudenoe Light; the British Islands, on the west; and on the south, the coasts of France, as far as the mouth of the Loire. A chart of this kind cannot be otherwise than useful to navigators; and the present answers fully the purpose for which it is intended. A little pamphlet published a short time ago by the Admiralty, containing a complete tabulated statement of the light-houses of Great Britain, would be a valuable appendage to this chart; and we should be glad to see the method adopted in it followed up with respect to all other coasts.

MEDITERRANEAN SURVEY.

Extract of a Letter from an Officer in the Archipelago.

We landed from the Mastiff, with Captain Copeland, Lieuts. Graves, Griffiths, and Burnet, and Messrs. Edye, Le Mesurier, and Helpman. In two hours they arrived at Bounarbachi, and encamped for the night. On the following morning they started in search of Troy, following Cramer's authority; and, finding his report satisfactory, made a plan of it. Having done so, they proceeded to Alexandria-Troas. Stopping to dine at the warm baths, about two miles from the ruins, the temperature being above the scale of their thermometers, could not be ascertained: the water was brackish; they are resorted to for rheumatic complaints. Ruins on a large scale were found at Alexandria-Troas. On the following morning, Captain Copeland, being unwell, left them, promising to forward an additional supply of provisions to Bounarbachi. From Alexandria-Troas they went to a village called Choumelie, reaching its quarries in two hours and a half, where they found nine fine granite columns, within a yard of the living rock, similar to two others they had passed on the road, thirty-seven feet long, and fifteen feet in circumference. At Choumelie they found an inscription described by Chandler; also a marble cistern in the court-yard of a mosque. On returning to Bounarbachi, they found a four days' supply of provisions. Next morning Lieut. Griffiths and Mr. Le Mesurier left them. The party being thus reduced to five, proceeded to trace the Simois through the hills to the fort of Mount Ida; in which they succeeded, after a three-hours' ride through a deep ravine, when they arrived at a place called Eveday, said to have been founded by Æneas, as well as the place of her burial. No ruins there. Returned to their tents, much fatigued, late, having planned the river down to the Acropolis of Troy. Next morning the party divided; Lieut. Graves, Mr. Edye, and Helpman going down the Simois, Lieut. Stanley and Mr. Burnet going down the Scamander. Having traced it till 1 P.M. the two latter branched off to the right, and joined the other party at some ruins, situated on an insulated hill, and covering an immense extent of ground. He remarked five different sorts of pillars scattered about, without being able to discover any remains of buildings to which they might have belonged. Much of these, as well as the ruins of Thymbree, having been taken away to build the modern towns of Kalefalli, Korn, Kali, and Hali Eli. They then went by Tcheplak, half a mile from the ruins, through Koomqui, where they found some more remains of a temple, to the beach, when they struck up the Simois again, went up the tombs of Achilles and Patroclus, encamping for the night at the junction of the Simois and Scamander. On the following morning, Stanley and Burnet traced the Scamander, being there only a dry bed in summer, to the point where they had left it the day before; the other party doing the same with the Simois. He observes, that the Scamander certainly joined the

Simois, and still does in winter; but much of the water is turned off by a canal made to supply a mill; running thence into Bourka Bay, where they watered the ships from it. On laying their work down, they found that the Timbrus was not noticed; so, Stanley and Burnet were sent with instructions to go to its source, and make a plan of its valley. At sunset of the first day, they reached the village of Timbrick, from just above which they saw Mount Athos, distant 100 miles, looking as high as the setting sun when its edge touches the horizon. On the following day they surveyed the other side of the valley, getting on board late in the evening, having surveyed the Timbrus; but finding another bed of a stream, which they had not time to go up, as the Mastiff was to sail for Tenedos next day.

An Island stated to have been discovered by the American brig Bolivar, in lat. 14° 46′ N., and long. 169° 18′ E., on the 9th of February last, and named Farnham's Island, appears to be no other than the island laid down in Arrowsmith's chart of the Pacific Ocean, seen by H.M.S. Cornwallis, in her passage from Owhyhee to China in 1807; and probably the Gaspar Rico of the Spaniards.

IRON STEAM-VESSELS.

THE following dimensions of the iron steam-vessels built at Liverpool by Mr. M'Gregor, Laird, and Company, are worthy the attention of our capitalists. We have little doubt of their soon becoming general among the enterprising people of the United States. But we hope, as we now have ample proof in the Alburkha of the plan of building *these* vessels of iron being decidedly good, that we shall not allow the Americans to take the lead of us so long as we did in the general use of wooden steam-vessels:—

THE ALBURKHA.—Length 70 feet, beam 13 feet, depth 6 feet 6 inches, tonnage, including engine-room, 56. Draft of water, with engine, coals, and water in boiler, 2 feet 9 inches. With provisions, water, &c., for her voyage to the Niger, 4 feet 6 inches.

The bottom and sides of this vessel are composed of iron plates, the former five-sixteenths of an inch thick, the latter a quarter of an inch. Engine 15 horse-power.

All accounts that have been received from this vessel agree in stating that she is much *cooler* and *drier*, and of course more *healthy*, than a vessel built of wood; that she is an excellent *sea* boat; and, although exposed on her voyage to very severe weather, never had made a drop of water from the time she left Liverpool up to the date of the last accounts received from her.

Mr. William Laird and son have nearly completed an iron steamer for the "Irish Inland Steam Navigation Company," to ply on Loch Derg, between Shannon-Harbour and Killaloe. From the great power to be put on board this boat, in addition to her light draft of water, it is expected that she will perform the distance (twenty-four miles) between the above-named places in two hours.

Her dimensions are, length 130 feet, beam 17 feet, depth 9 feet, tonnage, including engine-room, about 180; draft of water, with machinery and fuel, 4 feet six inches; bottom plates half an inch thick; sides five-sixteenth of an inch thick. Two engines of 45 horse-power each.

The same builders have just laid down another steam-vessel, to be sent to be sent to America. Her dimensions—length 110 feet, beam 22 feet, depth 7 feet six inches, tonnage about 240, including engine-room; draft of water, with machinery, fuel, and 400 bales of cotton, about 3 feet. The power of this vessel's engine is to be 36 horses, and will be placed on deck in order to obtain a long stroke, (five feet,) and to gain room for stowage of cargo below. The scantling of iron to be used, is, bottom five-sixteenths, full; sides, a quarter of an inch, full.

TYZACK'S WINDLASS.—This invention, a model of which has been shewn us, is likely, from the advantages it possesses, to supersede those at present in use. The power obtained by it with small means is very great, so much so, that, by testimonials which we have seen, moorings which had been accidentally hooked by the anchor have been hove up by it, in one instance; and in another, three ships' anchors, and five chains, from the same cause, and this with only six hands! This enormous power is gained by means of an iron shaft, and two short cranks acting on the barrel of the windlass by wheels attached at its extremities. The danger attending the use of the bars of those on the old principle is removed by four levers, which, being temporarily fastened to the windlass, give security to the men employed at it. The inventor has a patent for this windlass, and an account of it will be found in an early number of our work.

THE CALORIC-ENGINE.—We have had an opportunity of inspecting this invention, and it appears to us likely to supersede in a great measure the use of those engines in which the power is obtained from steam, particularly in vessels and locomotive carriages. The remarkable distinction between this engine and the steam-engine consists in a process of transfer, whereby the heat required to give motion to the engine at the commencement is returned, and made to act over and over again, requiring but a small quantity of heat to be continually added. This novel application of heat, whereby an almost unlimited quantity of mechanical power may be obtained from a small quantity of fuel, is founded on the well-known property of heat whereby the temperature is *equalized* between substances, however *unequal* in their *densities*.

The patentee does not confine himself to any particular impelling agent, for various aeriform, or even fluid substances, may be used; but the engine we have seen in operation is worked by *atmospheric air*. The working cylinder is fourteen inches in diameter, with eighteen inches stroke, working under a pressure of thirty-five pounds to the square inch, and making fifty-six strokes per minute.

The apparatus by which the transfer of the heat is effected, and which the inventor terms the "Regenerator," is five feet six inches long, and eight inches and a half in diameter, and containing seven tubes of two inches diameter each; and its operation is so perfect, that all the heat lost, that is, heat not returned to the engine, does not amount to more than three pounds per hour. The total consumption of fuel is, however, nearly two pounds per horse's power in the hour, on account of a considerable radiating surface being exposed to the atmosphere without any nonconducting covering. The power of the engine (equal to five horses') is checked by a break, loaded with 4,000 lbs. weight, acting on the circumference of a wheel of two feet diameter, fixed on the fly-wheel shaft. The extraordinary advantages of such an engine will at once be seen by our readers.

AURORA BOREALIS.—On the occasion of the great aurora of the 7th of January, 1831, M. Arago observed the magnetic needle powerfully affected; whilst Mr. Sturgeon, of Woolwich, could not notice it at all. On the 19th of

April, 1831, Mr. Christie, of Woolwich, in company with Mr. Faraday, observed the most unequivocal signs of auroral action. This observation, made by two philosophers perfectly habituated to such experiments, must be considered probably the most complete evidence yet obtained in this country. On the whole, it seems undeniable that the aurora borealis, frequently, at least, exercises the most marked action on the magnetic needle, with regard to variation, dip, and intensity.—*Reports of British Association.*

Chronometer Rates.—The following notice was alluded to in our 18th Number, and we have no doubt that the system adopted will be advantageous to those who avail themselves of it:—

"Admiralty, 28th October, 1833.

"The Lords Commissioners of the Admiralty hereby give notice, that a Ball will henceforward be dropped, every day, from the top of a pole on the Eastern Turret of the Royal Observatory at Greenwich, at the moment of one o'clock P.M. mean solar time. By observing the first instant of its downward movement, all vessels in the adjacent reaches of the river, as well as in most of the docks, will thereby have an opportunity of regulating and rating their chronometers.

"The Ball will be hoisted half-way up the pole, at *five* minutes before One o'clock, as a preparatory signal, and close up at *two* minutes before One.

"By command of their Lordships,
"John Barrow."

Remarkable Change of Diurnal Variation.—On Saturday, the 31st of August, the south end of the diurnal variation needle used by Capt. Kater, at Limerick, made an extraordinary deviation to the westward of nearly half a degree. This occurred about seven minutes before 4 P.M. At 3 h. 50 m. P.M. it was 15′ 10″ west of zero, and at 3 h. 55 m. between 40′ and 50′ west of zero. Had this remarkable occurrence any thing to do with the severe gale of that day? the same gale which was felt on the south-east coast of England so severely, but scarcely any of it at Limerick.

NAUTICAL MISCELLANY.

NAVAL INTELLIGENCE.

The Royal Navy in Commission.

⁂ S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

Actæon, 26—Hon. F. W. Grey, 1st Sept. at Stamboul.

Ætna, S. V. 6—Com. W. G. Skyring, Portsmouth harbour. Ready for sea 1st Nov.

African, St. V.—Lieutenant J. Harvey, 31st Sept. arrived at Falmouth.

Alban, St. V.—Lieutenant A. Kennedy, 27th Aug. at Demerara.

Alfred, 50—Capt. R. Maunsell, 1st Sept. at Smyrna.

Algerine, 10—Com. Hon. J. F. F. De Roos, 12th July sailed from Bahia; 27th August at Pernambuco.

Alligator, 28—Captain G. R. Lambert, 18th April arrived at Singapore from Madras.

Arachne, 18—Com. W. G. Agar, 4th Sept. at Demerara.

Andromache, 28—Capt. B. Yeoman. Hamoaze, fitting.

Ariadne, 28—Capt. C. Phillips, 13th Aug. at Bermuda.

Asia, 84—Rear-Admiral Sir G. Parker, C.B., Capt. P. Richards, Tagus, 17th and 22d August, and 13th Sept.

Astræa, 8—Capt. W. King, Falmouth, superintendent of Foreign Packets.

Athol, *Troop Ship*—Mr. A. Karley, 9th Oct.

arrived at Plymouth from Cork; 10th sailed for Lisbon.

BADGER, 10—Com. G. F. Stowe, Simon's Bay.

BARHAM, 50—Capt. H. Pigot, 1st Sept. at Nauplia; 2d Oct. Malta.

BEACON, S. V.—Com. R. Copeland, 13th June at Enos; 1st July at Smyrna. Surveying service.

BEAGLE, 10, S. V.—Com. R. Fitz-Roy, 13th July Monte Video.

BELVIDERA, 42—Capt. Hon. R. S. Dundas, 7th Sept. sailed for Figueira.

BLANCHE, 46—Capt. A. Farquhar, K. H. C. B. 13th Oct. arrived at Portsmouth; 18th went into harbour. Left Halifax 1st Aug.; Trinidad 4th, and Barbadoes on 15th Sept.

BRISK, 3—Lieut. Stevens, 15th June at the Gambia; arr. there 14th.

BRITANNIA, 120—Vice-Admiral Sir P. Malcolm, Capt. P. Rainier, 1st Sept. at Nauplia.

BRITOMART, 10—Lieutenant H. Quin, 8th June arrived at the Gambia. 14th sailed for Sierra Leone.

BUFFALO, *Store Ship*—Mr. F. W. R. Sadler, *Master*, 17th July at Rio; 21st July sailed for Australia.

CALEDONIA, 120—Captain T. Brown, 7th Oct. sailed for Malta.

CARRON, St. V.—Lieut. Com. J. Duffill; 18th Oct. arr. at Plymouth.

CASTOR, 36—Capt. Rt. Hon. Lord John Hay, 18th Sept. off Oporto; 4th Oct. arr. from Vigo at Lisbon.

CEYLON, 2.—Lieut. H. Schomberg, Malta.

CHALLENGER, 28—Capt. M. Seymour, 11th Oct. went out of harbour, and put to sea to try sailing qualities; 19th at Spithead; 20th sailed for South America. Passengers, Col. Walpole and W. Chamberlain, Esq., Consuls to Coquimbo and Valparaiso.

CHAMPION, 18—Com. Hon. A. Duncombe, 27th July off Tenedos, from Alexandria; 1st Sept. at Malta.

CHARYBDIS, 3—Lieut. Com. R. B. Crawford, 21st July at the Cape, from Ascension. Cape 15th Aug.

COCKATRICE, 6—Lieut. Com. W. L. Rees, Rio Janeiro.

COCKBURN, 1—Lt. Com. C. Holbrook, Kingston, Lake Ontario.

COLUMBIA, St. V. 2—Lieut. Com. R. Ede, Woolwich.

COLUMBINE, 18—Com. O. Love, 18th Aug. at Halifax; sailed 21st for Jamaica.

COLUMBINE, St. V.—Lieut. R. Ede, Portsmouth 17th Oct.

COMET, St. V.—Mr. T. Allen, Woolwich.

COMUS, 18—Com. W. Hamilton, 12th July arr. at Jamaica from Barbadoes.

CONFIANCE, St. V. 2—Lieut. Com. J. W. Waugh, 11th Oct. arr. from Lisbon at Falmouth.

CONWAY, 28—Captain H. Eden, 8th Aug. arr. at Madeira; 9th sailed for Rio.

CORDELIA, 10—Com. C. Hotham, 15th Oct. arr. at Portsmouth. Left Malta 1st Sept. 17th Oct. sailed for Sheerness, to pay off.

CRUIZER—Com. Jas. M'Causland, Sheerness, fitting.

CURAÇOA, 26—Capt. D. Dunn, 13th April arrived at Sincapore, from Bombay and Batavia.

CURLEW, 10—Com. H. D. Trotter, 9th May captured a vessel with 290 slaves on board, off Fernando Po.

DEE, St. V. 4—Com. W. E. Stanley, (*b*) 29th Sept. arr. at Portsmouth, from Milford, and sailed for Chatham. 2d Oct. arrived at Portsmouth, with a wreck in tow. 14th Oct. sailed for Woolwich.

DISPATCH, 18—Com. G. Daniell, 22d Aug. at Jamaica; 15th Sept. at Bermuda.

DONEGAL, 78—Capt. A. Fanshawe, 12th Sept. in the Tagus.

DROMEDARY—R. Skinner, Bermuda.

DUBLIN, 50—Capt. C. Hope, 16th June at Valparaiso.

ECHO, St. V. 2—Lieut. Com. R. Otway, Woolwich.

ENDYMION, 50—Captain Sir S. Roberts, Knt. C.B. 19th Oct. arr. at Plymouth.

EXCELLENT, 58—Capt. T. Hastings, Portsmouth.

FAIR ROSAMOND, *Schooner*—Lieut. Com. G. Rose, 22d Aug. in the Tagus; 30th Aug. sailed for Sierra Leone.

FAIRY, S. V. 10—Com. W. Hewett, surveying in the North Sea.

FAVORITE, 18—Com. G. R. Mundy, Portsmouth, fitting.

FIREBRAND—Lieut. W. G. Buchanan, Irish station.

FIREFLY, 2—Lieutenant J. M'Donnel, 9th July at Jamaica; 24th Aug. sailed from Port-au-Prince.

FIREFLY, St. V.—Lieut. T. Baldock, 19th Oct. sailed with mails for Mediterranean.

FLAMER, St. V. 6—Lieut. R. Bastard, Woolwich.

FLY, 10—Com. P. M'Quhae, 22d Aug. at Jamaica; 15th Sept. at Bermuda.

FORESTER—Lieut. G. Miall, Plymouth, fitting. 16th into Sound.

FORTE, 44—Capt. W. O. Pell, 2d Sept. at Madeira; 3d sailed for Halifax.

GANNET, 18—Com. J. B. Maxwell, 6th July left Jamaica for Halifax; 30th July arrived; 13th Aug. left for Bermuda.

GRIFFON, 3—Lieut. E. Parlby, 10th July at Gambia River.

HARRIER, 18—Com. H. L. S. Vassal, 23d April sailed from Sincapore; 25th July at Trincomalee.

HERMES, St. V.—Lieut. J. Wright, 10th Sept. arr. at Cadiz; 13th Sept. left Gibraltar for Malta.

HORNET, 6—Lieut. F. R. Coghlan, running between Monte Video and Rio Janeiro.

HYACINTH, 18—Com. F. P. Blackwood, 13th July sailed for East Indies; spoken 6th Aug. 32° S. 12° E.

IMOGENE, 18—Capt. P. Blackwood, 3d April, at Sydney, from Hobart Town.

INVESTIGATOR, 16, S. V.—Mr. G. Thomas Shetland Islands, surveying.

ISIS, 50—Captain J. Polkinghorne, 21st July left the Cape; 7th Aug. arrived at St. Helena, and sailed the 9th for Ascension and England. 18th at Ascension.

JACKDAW, S. V.—Lieut. E. Barnett, 14th June arr. at Nassau.

JUPITER, *Troop Ship*—Mr. R. Easto, 18th May arr. at Cape; 29th April arr. at Mauritius with 19th Regt.; 30th May sailed for Ceylon to convey troops home.

LARNE, 18—Com. W. S. Smith, 22d Aug at Jamaica; 15th Sept. at Bermuda.

LEVERET, 10—Lieut. W. F. Lapidge, 28th July arr. at St. Ubes from Lisbon; 14th Aug. arr. at Lisbon; 3d Sept. in the Tagus: 12th Sept. at St. Ubes.

Lightning, St. V.—J. Allen, 29th September returned to Portsmouth; 30th sailed for Dover, to convey their Royal Highnesses the Duke and Duchess of Cumberland and Prince George, to Hamburgh. Having performed this service, she arrived at Portsmouth on the 15th Oct. and went on to Plymouth.

Lynx, 10—Lieut. Com. H. V. Huntley, Portsmouth, fitting.

Madagascar, 46—Capt. E. Lyons, July at Nauplia. Returned from Turkey with King Otho, after performing quarantine at Syra. 1st Sept. at Nauplia.

Magicienne, 24—Capt. J. H. Plumridge, 13th to 19th April at Singapore; 9th June at Madras.

Magnificent, 4—Lieut. J. Paget, Port Royal.

Magpie, *Cutter*—Lieut. Com. H. F. Glasse.

Malabar, 74—Capt. Hon. J. Percy, 30th July at Constantinople; 1st Sept. off Nauplia. The Malabar sails from this to join the squadron on the 1st of August; she beats the whole of the squadron on every point of sailing, except the Barham—and the latter has very little advantage over her.

Mastiff, 6, S. V.—Lieut. T. Graves, Imbro 4th July; 18th off Dardanelles.

Melville, 74—Vice-Admiral Sir John Gore, K.C.B., Capt. H. Hart, 6th June at Mauritius.

Messenger, St. Transport—Mr. J. King, Portsmouth station.

Meteor, St. V.—Lieut. Symons, September at Ancona.

Monkey, — Lieut. ———, 26th May at Jamaica.

Nautilus, 10—Com. Rt. Hon. Lord G. Paulett, 2d Oct. off Oporto.

Nimble, 5—Lieut. C. Bolton, 3d July at Havana.

Nimrod, 20—Com. J. Mc. Dougal; 18th Sept. in the Douro.

Ocean, 80—Vice-Admiral Sir Richard King, Bart. K.C.B., Capt. S. Chambers, Sheerness.

Onyx, 10—Lieut. A. B. Howe, Plymouth station.

Orestes, 18—Com. Sir Wm. Dickson, Bart. Left Oporto 18th Sept.; 26th arrived at Spithead; Portsmouth harbour, went into dock, in consequence of having grounded off Villa Nova; 7th Oct. undocked.

Pallas, 42—Capt. W. Walpole, 9th and 19th July at Jamaica.

Pearl, 20—Com. R. Gordon, 4th August at Jamaica.

Pelican, 18—Com. J. Gape, 2d October at Malta from Tunis.

Pelorus, 18—Com. R. Meredith, 6th June sailed for Ceylon, from Mauritius.

Phœnix, St.V.—Com. R. Oliver, Woolwich.

Pickle, 5—Lieut. C. Bagot, Bahamas.

Pike, 12—Lieut. A. Brooking, 23d Sept. sailed for Lisbon and Oporto; 3d Oct. arr. at Lisbon.

Pluto, St. V.—Lieut. T. R. Sulivan, 19th June at Ascension, refitting.

Prince Regent *Yacht*—Capt. G. Tobin, Deptford.

Pylades, 18—Com. E. Blankley, 17th July sailed for Valparaiso.

Pyramus—26th July Plymouth Sound; 3d Sept. left Madeira, sailed in charge of Porte.

Racer, 16—Com. J. Hope. Portsmouth, 26th Aug. went out of basin; 5th Sept. anchored at Spithead; 12th Sept. sailed in company with Lightning for Plymouth; 20th Sept. sailed from Plymouth.

Racehorse, 18—Com. F. V. Cotton, 31st Aug. arr. at Maranham from Para.

Rainbow, 28—Capt. Sir J. Franklin, Knt. off Tenedos 12th July; 1st Sept. at Nauplia; expected home.

Raleigh, 18—Com. A. M. Hawkins, 1st Sept. at Corfu.

Rapid, 10—Lieut. Com. F. Patten, 1st of Oct. arr. at Spithead; 20th sailed.

Rattlesnake, 28—Capt. C. Graham, 16th June at Valparaiso.

Raven, S. V. 4—Lieut. W. Arlett, Portsmouth, refitting.

Revenge, 78—Capt. D. H. Mackay, 8th Sept. sailed for Lisbon.

Rhadamanthus, St. V.—Com. G. Evans, 9th July at Jamaica.

Ringdove—Com. John Mc. Causland, Plymouth, fitting.

Romney, *Troop Ship*—Mr. R. Brown, 10th Oct. at Cork.

Rover, 18—Com. Sir G. Young, Bart., 12th July cruising off Tenedos.

Royal George *Yacht*—Capt. Right Hon. Lord A. Fitzclarence, G.C.H., Portsmouth.

Royal Sovereign *Yacht*—Capt. C. Bullen, C.B., Pembroke.

Royalist, 10—Lieutenant R. N. Williams, Plymouth station.

St. Vincent, 120—Capt. H. F. Senhouse, 1st. Sept. at Smyrna. 2d Oct. Malta.

Salamander, St. V.—Com. W. F. Austin, 22d Sept. arrived at Lisbon; 6th Oct. left Lisbon; 7th touched at Oporto; 12th arr. at Plymouth.

Samarang, 28—Capt. C. H. Paget, 26th July sailed for Rio.

San Josef, 110—Admiral Sir W. Hargood, Capt. G. T. Falcon, Hamoaze.

Sapphire, 28—Capt. Hon. W. Trefusis, 4th Sept. at Trinidad.

Satellite, 18—Com. R. Smart, 31st Aug. arr. at Rio Janeiro from Bahia.

Savage, 10—Lieut. R. Loney, 18th September sailed for Falmouth; 20th October at Plymouth.

Scout, 18—Com. W. Hargood, 1st Sept. at Nauplia.

Scylla, 18—Com. Hon. G. Grey, 7th July arr. at Malta from Tripoli. 2d Oct. at Malta.

Seaflower, 4—Lieut. J. Morgan, 12th Sept. sailed for the westward.

Serpent, 16—Com. J. C. Symonds, 15th Sept. at Barbadoes.

Skipjack, 5—Lieut. W. Shortland, 18th July sailed from Halifax.

Snake, 16—Com. W. Robertson, 26th Aug. arrived at Rio Janeiro.

Sparrow, *Cutter*—Lieut. C. W. Riley, 13th Oct sailed for Falmouth.

Spartiate, 74—Rear-Admiral Sir M. Seymour, Capt. R. Tait, 3d August, at Rio Janeiro.

Speedwell, 5—Lieut. Crooke, 17th May Sept. arrived at Maranham.

Speedy, *Cutter*—Lieut. J. P. Roepel, 15th sailed for Falmouth and Lisbon.

Stag, 46—Capt. N. Lockyer, Sept. 12th in the Tagus.

Swan, 10—Lieut. J. E. Lane, North Sea station.

Sylvia, 1—Lieut. T. Henderson, Portsmouth station.

Talavera, 74—Capt. E. Chetham, 12th Sept. Tagus.

Talbot, 28—Capt. R. Dickinson, C.B. 30th June at Mauritius: to proceed to India, and return home.

Thunderer, 84—Capt. W. F. Wise, C.B., Sheerness, fitting.

Thunder, S. V.—Commander R. Owen, 17th Aug. arrived at Demerara; employed surveying.

Trinculo, 18—Lieut. Com. Thompson, captured on the 7th July the Secundo schooner, with 307 slaves, and sent her to Sierra Leone, under charge of Mr. Hollinsworth, mate.

Tweed, 20—Com. A. Bertram, 28d Aug. at Jamaica; 15th Sept at Bermuda.

Tyne, 28—Capt. Rt. Hon. Lord James Townsend, 31st March arr. at Callao from Islay; 4th April sailed for Arica.

Undaunted, 46—Rear-Adm. Warren, Capt. E. Harvey, 26th June Cape of Good Hope; 28th June sailed for Madras.

Vernon, 50—Vice-Admiral Sir G. Cockburn, K.C.B., Capt. Sir G. A. Westphal, Knt., 1st Aug. at Halifax.

Vestal, 26—Capt. W. Jonee, 30th Sept. arr. at Portsmouth from Milford; 1st Oct. docked, and taken out again in a few hours; 12th at Spithead; 20th sailed for the West Indies.—The Vestal is a vessel of Captain Symond's construction. She is a beautiful ship, and beats every thing she has come in contact with. She has a round stern, but so beautifully disguised as to have every appearance of a square one; her breadth is enormous compared with others of her class.

Victor, 18—Com. R. Russell, 4th Sept. at Trinidad.

Victory, 104—Adm. Sir T. Williams, G.C.B., Captain C. R. Williams, Portsmouth.

Viper, 6—Lieut. H. James, 12th Sept. in the Tagus.

Volage, 28—Capt. G. B. Martin, C. B. 1st Aug. left Malta for Nauplia.

Wasp, 18—Com. Jas. Burney, Portsmouth, 26th Aug. went out of basin; 14th Sept. sailed to join the Lightning; 20th Sept. sailed from Plymouth.

Wolf, 18—Com. W. Hamley, 20th April arr. at Sincapore from Malacca; 23d sailed for a cruise.

Commissioned.

Lynx, 10, (new)—Portsmonth.
Thunderer, 84—Sheerness.

Paid off.

Kangaroo,
Pincher, } at Jamaica.
Minx.

VARIETIES.

A frigate, to mount 36 guns, and to be built on the plan of Capt. Symonds, the present surveyor of the Navy, is ordered to be laid down in this dockyard. The Royal Frederick, 120, has commenced lying down in this yard.—*Hints Tel.*

The British Government authorized Capt. Chads, of the Royal Navy, who was recently sent to Boulogne, to inquire into the circumstances of the loss of the Amphitrite transport, to distribute the sum of £100 among the French sailors who so nobly exerted themselves in endeavouring to save the lives of the sufferers.—*Ports. Herald.*

A landing-place, near the Dock-yard gates, is to be made for the Commander-in-Chief at this port, and for a general landing-place for ships' boats which come on duty to the Admiral.—*Ports. Her.*

The Egyptian Fleet.—On the 18th of July, the Homs, a ship of 100 guns, was launched at Alexandria. The Pacha, who was present, expressed the most lively satisfaction at this new proof of the activity of his chief engineer, Carisy Bey. The Pacha's fleet now consists of seven ships, seven frigates, five corvettes, and eight brigs.—*Le Moniteur de l'Egypt.*

Cape-town papers to the 14th of June have also arrived. A plan has been set on foot there for a scientific expedition into central Africa, to explore those regions for the purpose of elucidating their geography, the nature of their productions, and the advantages these may offer to commercial enterprise.—*Times.*

The Danish navy now consists of six ships of the line, of from 64 to 84 guns; six frigates, of 36 to 46 guns; six corvettes, of 20 guns; six brigs, from 12 to 18 guns; six cutters and schooners, of 8 guns; and seventy gun-boats, with 1 or 2 guns—so that a squadron with 1,000 guns, might be sent to sea. Upon the 12th of September a new ship of the line, of 84 guns, was launched at Copenhagen, in presence of their Majesties and the Royal Family, and received the name of the Skjold.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Retired Rear-Admiral—H. Garrett.

Captain—James Ross.

Commanders—W. F. Lapidge. *Retired*, R. Tricker.

Lieutenant—C. Dixon.

APPOINTMENTS.

ÆTNA, S.V.—*Lieuts.* T. Maynard, C. Beddoes; *Surg.* D. Baird; *Boatsw.* T. Tyne.

ANDROMACHE, 28—*Lieuts.* W. H. Hill, C. Tennant, A. Reed; *Surg.* W. Graham; *Master*, R. Stewart; *Purser*, R. Mitchell.

ALGERINE, 10—*Lieut.* E. Gray.

BEAGLE, S. V.—*Assist. Surg.* D. Irvine; *Clerk*, V. D. Hall.

CLIO, 18—*Com.* J. Sullivan.

CHATHAM DOCKYARD—*Director of Police*, Lieut. W. Gray.

CORDELIA, 10—*Lieut.* C. C. Nelson; *Surg. Acting*, W. Idington, M.D.

CRUIZER, 18—*Lieut* C. Fitzgerald; *Mast. Acting*, E. Codnor; *Surg.* J. Sinclair, M.D.; *Purser*, C. Beaumont; *Assist. Surg.* J. Allan.

CURLEW, 10—*Lieut.* M. M'Neale; *Purser*, J. Chapman.

ENDYMION, 50—*Lieut.* J. M. Symonds.

EXCELLENT, 58—*Mate*, G. B. Dewes; *Clerk*, E. Rowe.

FAIRY, S.V.—*Master*, C. D. Beam.

FLY, 18—*Lieut.* G. Byng.

HASLAR HOSPITAL—*Assist. Surgeon*, J. Chalmers.

ISIS, 50—*Assist. Surg.* J. Peters.

LYNX, 10—*Lieut. Com.* H. V. Huntley; *Assist. Surg.* A. Cross; *Sec. Mast.* C. H. Müller; *Clerk*, C. Thornton.

MADAGASCAR, 46—*Lieut.* G. A. Elliot; *Assist. Surg.* D. Kerr.

MALABAR, 74—*Lieut.* W. H. A. Morshead.

MAGPIE, 4—*Lieut. Com.* H. F. Glasse.

MELVILLE, 74—*Com.* E. Yonge.

NIMROD, 20—*Com.* J. M'Dougal.

OCEAN, 80—*Lieuts.* W. L. Sheringham, M. A. Slater; *Master*, J. Napier.

ORESTES, 18—*Master*, J. Coaker; *Purser*, D. Bruce; *Carpr.* G. Chappel.

PANDORA, *Packet*—*Gunner*, J. Carey.

PALLAS, 42—*Lieut.* C. Bosanquet.

PLYMOUTH DOCKYARD—*Inspector*, Mr. Parsons.

PORTSMOUTH DOCKYARD—*Inspector*, Mr. Allen.

RAVEN, S.V.—*Assist. Surg.* J. Shaw, J. Robertson.

RALEIGH, 18—*Lieut.* A. W. Jerningham.

REVENGE, 78—*Lieut.* W. Louis.

ROSE, 18—*Lieut.* F. T. F. Henderson.

SALSETTE, *Ord.*—*Carpr.* B. Gillard.

SAN JOSEF, 110—*Assist. Surg.* R. T. C. Scott.

SAPPHIRE, 28—*Lieut.* S. H. Usher.

SAVAGE, 10—*Lieut.* A. Browning.

SHEERNESS DOCKYARD—*Lieut. Inspector of Police*, E. Wise.

SKIPJACK, 5—*Lieut* W. H. Willes.

SPARTIATE, 76—*Lieuts.* T. V. Anson, Jas. T. Paulson; *Assist. Surg.* J. Mould; *Clerk*, H. Snow.

STAG, 46—*Lieut.* Hon. A. Keith.

ST. VINCENT, 120—*Assist. Surg.* A. Sinclair.

SWALLOW, 6—*Lieut.* W. Crispin.

TALAVERA, 74—*Mid.* Williams; *Gunner*, J. Monk.

TERMAGANT, 10—*Carpr.* G. Andrews.

THUNDERER, 84—*Capt.* W. F. Wise, C.B.; *Lieuts.* W. Hoseason, R. H. Bunbury; *Purser*, J. Collins; *Assist. Surg.* A. C. Threshie, M.D.

UNDAUNTED, 46—*Lieut.* R. Hay.

VICTORY, 104—*Assist. Surg.* J. Chalmers; J. Kettle: *Mid.* R. Haig; *Clerk*, J. Hillyer.

WARSPITE, 76—*Gunner*, J. Wright.

COAST GUARD—*Lieuts.* J. Anderson; W. E. Ashby; W. Fuller; F. Harris; W. Newlett; S. King; J. F. Lamb; O. C. M'Lean; W. D. J. Mills; T. Parsons; J. Walker.

Midshipmen passed for Lieutenants. College.

Hon. H. Ashly, of Wolf; E. Charlewood, of Trinculo; E. Holmes, of North Star; J. D. Paynter, of St. Vincent; E. Pearne, of Ocean.

NEW MERCHANT VESSELS. FROM LLOYD'S REGISTER FOR 1833.

Reported to 21st October.

VESSELS.	RIG.	WHERE BUILT	TONS.
Appleton	Brig	Liverpool	258
Bassenthwaite	Brig	Maryport	221
British Merchant	Barque	Sunderland	370
British Union	Snow	Newcastle	213
Camilla	Barque	Newcastle	331
Chance	Schooner	Maryport	56
Commerce	Brig	Tranmere	153
Dampier	Brig	Newcastle	306
Delight	Smack	Ulverston	62
Eliza	Sloop	London	33
Eliza Stewart	Ship	Greenock	424
Eliza & Mary	Schooner	Penzance	86
Emma	Schooner	Liverpool	156
Fanny	Sloop	Workington	32
Harriott	Brig	Yarmouth	173
Henrietta	Barque	Liverpool	199
Hope	Schooner	Bristol	76
John Quayle	Smack	Isle of Man	58
John and Ann	Sloop	Bartlock	48
John & James	Barque	Whitby	288
Leveret	Schooner	Yarmouth	106
Liberty	Schooner	Dysart	141
Livonia	Brig	Grangemouth	160
Louisa	Snow	Sunderland	257
Margaret and Ann	Smack	N. Quay	69
Mary Sharp	Barque	Greenock	328
Monarch	Schooner	River	585
Pennington	Barque	Belfast	250
Ranger	Schooner	Southampton	158
Scotia	Barque	Sunderland	308
Stormont	Snow	Newcastle	292
Thomas and James	Sloop	Portaferry	52
Three Sisters	Schooner	Bristol	66
Warrior	Brig	Maryport	99
Western Isles	Smack	Aberdeen	50
Wilton Wood	Brig	Maryport	212

WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1833.

Continued from page 623.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
569 Adamant	Of Sunder-	land,	Not heard	of since	Sept.	
570 Ann	Francis	Yarmouth	Bristol	Aberon	14 Sept.	Crew saved.
571 Ben Lomond	Newcator	Hamburgh	P. Douglas	North Sea	—	Doubtful.
572 Britannia	Cutting	Rotterdam	Stockton	Hinder	Sept.	Crew saved.
573 Britannia	Odis	Bordeaux	—	Mauritius	Previ-	ous to Aug. Total.
574 Briton	Rowlaod	Plymouth	Quebec	Cape Ray	38 Aug	Crew &c. saved.
575 Ceres	—	Lerwick	—	Fowla Island	27 Sept.	One saved only.
576 City of Waterford	Bailey	—	Lisbon	Portugal C.	22 Sept	Crew &c. saved.
577 Eagle	Horn	Aberdeen	—	C. Scotland	21 Sept.	Crew saved.
578 Ellil	Clark	Wivenhoe	London	Maplin I.	13 Oct.	Crew saved.
579 Elphinstone	—	Bombay	Sumatra	Coast Mayo	19 May	Crew saved.
580 Essex	Vaughan	N. Orleans	Liverpool	30° N. 75° W.	12 Aug.	By Fire.
581 Fanny and Matilda	Coolly	S. Petersbrg	Liverpool	S Ronaldshay	10 Sept.	Crew saved.
582 Frances Mary	—	Of Waterfrd	—	47.19.N. 37 W	9 Aug.	Abandoned.
583 Hebe	O'Hara	Dundalk	Irvine	Dundalk	3 Oct.	
584 Heusingers	Not heard	of since	—	—	Sept.	Of Hull.
585 Hibernia	Driscoll	Newport	Cork	Penarth Rds.	23 Sept.	Crew saved.
586 Hope	—	Dunbar	—	—	Sept.	Deserted.
587 Horsley Hill	—	Honduras	London	Cozunnal	July	
588 Ingria	Wilson	Hull	—	Davis Straits	July	
589 Isle	—	Wisbeach	—	Humber	Sept.	All drowned.
590 James	Hogg	Memel	Waterford	C. Cornwall	24 Sept.	Crew saved.
591 John	Morrison	Blytn	Dover, not	heard of since	28 Sept.	
592 Lord Byron	James	Liverpool	Gaboon	Bimbia	26 June	Part crew saved.
593 Lord Gambier	—	Quebec	Sunderland	Aberayon	Sept.	
594 Mulgrave Castle	Conner	Pedicodiac	Hull	Humber	2 Oct.	Crew saved.
595 Oscar	Jones	Stettin	Hull	heard of since	9 June	
596 Petersburgh	Of Hull	Not heard	of since	—	Sept.	
597 Prince Leopold	Halsall	I. of Man	Poulton	Off Wyre	Sept.	Crew saved.
598 Richard	Hexton	Rye	Liverpool	Off Portland	2 Oct.	Foundered, crew sd
599 Robert	Hetherington	Newcastle	Harwich	Gunfleet	5 Oct.	Crew saved.
600 Royal William	—	Halifax	—	St. Kitt's	14 Aug.	
601 Sir Charles Price	Lee	South Seas	London	Society Isles	Apl. last	Crew saved.
602 Susan and Letitia	—	Shields	Rochelle	N. Sea	Sept.	Crew saved, foundr.
603 Tula	Storm	Not heard	of since	the	Aug.	
604 Two Cousins	—	Clay	—	North Sea	Sept.	
605 Webster	Hall	Newcastle	London	Coast Norfolk	8 Sept.	
606 Wharfinger	—	Tees	Not heard	of since	29 Aug.	
607 William and Mary	Foster	Falmouth	Swansea	Manacles	12 Oct.	Master drowned.
608 Wilson	Foster	Glo'ster	St. Andrew's, N.B	Off C. Clear	25 Sept.	Abandoned.
609 Yarmouth	—	Blakeney	—	N. Sea	Sept.	
610 Zephyr	Fitzsimmons.	London	Belfast	Tuskar R.	9 Oct.	Crew saved.

FURTHER PARTICULARS OF WRECKS.

John, Morrison.—Supposed to have foundered near Lynn.

Lord Byron.—Part of her crew, sails, rigging, and stores, arrived at Fernando Po 2d July.

Britannia.—No. 467 of our last table of wrecks, arrived at the Mauritius 24th June, from Timor.

Oscar, Jonas.—Passed the Sound 9th June.

Ben Lomond.—A box containing the ship's papers, charter, &c., dated 2d Aug., of this vessel, was picked up in the North Sea, and carried to Hull.

Mulgrave Castle.—Got on a bank in the Humber, during a fog, and upset.

Frances Mary.—Fallen in with, water-logged, by the brig Julia. She was principally laden with deals.

Extract of a letter received from St. John's, Newfoundland, dated the 15th of September: "We have been surprised by the arrival of the **Maria-Elizabeth**, from Greenland. This vessel was loaded for us at Cork, and sailed from thence on the 18th of March, and from that time had not been heard of till she made her appearance in this harbour this evening.

The captain states that he was caught in the ice, and dragged by it to the coast of Greenland, where he had been detained three months and a half."

We exceedingly regret to state, that the ADAMANT, HEUSINGERS, and PETERSBURGH, three vessels belonging to this port, which were out in the late gales, have not yet been heard of. The most fearful apprehensions as to their fate can only be entertained.—*Sunderland Herald.*

HEBE, O'Hara.—Got upon her anchor in the river, and sunk immediately.

CITY OF WATERFORD.—Run ashore in a fog two miles north of S. Martinho. Passengers and crew safely landed. She had on board the state-carriages, baggage, books, and dresses of the queen of Portugal, all of which were lost, as she soon after went to pieces.

WILSON, Foster.—Abandoned, with twelve feet water in her hold. Master, second-mate, and six of crew, arrived at Bere Island 27th Sept. The remainder took to the pinnace.

ESSEX.—The master and a passenger died the evening before. The mate and crew arrived at Nassau 19th Aug. in the boat.

WRECK OF THE AMPHITRITE.

(*From the Times.*)

The instant inquiry instituted by the Lords of the Admiralty into the circumstances which led to the wreck of the Amphitrite convict-ship off Boulogne, displayed their anxiety to probe to the bottom any apparent negligence in the subordinate departments of the Navy. The subjoined account of a correspondence between Lieutenant-Colonel Maxwell and Sir J. Graham, which reflects equal honour on the humanity of both, evinces that there is at present in the Admiralty a disposition to mitigate, if they cannot entirely remove, those distressing cases of destitution to which our naval officers, in the course of their professional career, are occasionally exposed. Mr. Towsey, on whose behalf Lieut.-Colonel Maxwell applied to Sir James Graham, is the only officer of the Amphitrite who survived her wreck. He lost on that occasion every thing but life; and that circumstance was in itself a sufficient passport to the benevolent kindness and attention of Lieut.-Colonel Maxwell, who not only received him at once into his own house, but has since exerted himself effectually to restore his protegê to his former station in his profession:—

" *To the Editor of the Times.*

" Boulogne-sur-Mer, Sept. 21.

" Oderunt peccare boni, virtutis amore."

" Sir—When politicians are to be found in every grade, from the frequenters of a palace to those of a pot-house, a man acknowledging that he had no politics would be as bad as avowing he had no religion. Be it so. My creed is, that the more a military man shuns that thorny path the better. But, should I be called upon to confess, or be judged, I might be condemned, under the impression that some members of my family are opposed to the powers that be. Perhaps, if hard pushed, I might myself plead guilty to a gentle inclination the wrong way; but, being anxious to be called forth in the service of my country—" not a word about the pig"—my political faith, (if I have any,) I trust would not stand in my way: besides,

" Cede repugnanti, cedendo victor abilis,"

" A prudent concession sometimes leads to victory."

At all events, it shall not prevent me praying you to give publicity to the noble and disinterested act of a public character, whose politics certainly are at variance with those of many I love and esteem.

" It being the fashion now-a-days to believe that virtue and humanity are banished from men's minds the moment they take office, the accompanying note, which proves the contrary, ought to be stamped in letters of gold, and circulated throughout the country. It originated in my having had the good fortune to fall in with a very deserving young man, Mr. James Towsey, wrecked in the Amphitrite, whilst working his passage out to New South Wales, to join an elder brother established there as a settler. Mr. Towsey, I found out, had served two years in the Alligator, with the late Captain Canning, and four years with Admiral Sir Thomas Baker, in the Warspite, as Master's Assistant; thus, completing his time, and being upwards of nineteen years of age, with excellent certificates from his former captains, and, moreover, having lost his little all by the melancholy catastrophe that took place near this port, I ventured, as an utter stranger, to address a letter in his behalf to the First Lord of the Admiralty, merely stating, that, from being a brother of the late Sir Murray Maxwell, he would understand my near and dear connexion with the British Navy, as, also, my having had two other brothers belonging to that profession, consequently accounting for my interest in all belonging to it.

" Read Sir James Graham's noble and generous reply to my appeal in behalf of Mr. Towsey—a reply that does honour to the best attributes of our nature, and sets off the human heart to the highest advantage.

" Praying you to pardon this trespass, I have the honour to be, Sir, your most obedient humble servant,

" A. M. MAXWELL, Lieut.-Colonel."

(*Copy.*)

" Sir James Graham presents his compliments to Lieut.-Colonel Maxwell, and has the honour to acknowledge the receipt of his letter of the 5th instant.

" In reference to Mr. Towsey's case, Sir James begs to inclose a copy of the extract of the new regulations, and, if Mr. Towsey can produce the required qualifications, and will come to England and pass his examination for a second master, their Lordships will then immediately appoint him to a ship. Sir James begs to inclose a £5 note for the use of Mr. Towsey.

" Devonport, Sept. 15."

The following account of loss and accidents of British vessels is extracted from Lloyd's List of 1829.—On foreign voyages, 157 wrecked; 284 driven on shore, of which 224 are known to have been got off, and probably more; 21 foundered or sunk; 1 run down; 35 abandoned at sea, eight of them afterwards carried into port; 12 condemned, as unseaworthy; 6 upset, one of them righted; 27 missing, one of them a packet, no doubt foundered.—Coasters and colliers: 109 wrecked; 297 driven on shore, of which 121 are known to have been got off, and probably many more; 67 foundered or sunk, 4 of them raised, 6 run down, 13 abandoned, 5 of them afterwards carried in; 3 upset, two of them righted; 16 missing, no doubt foundered. During the year, 4 steam-vessels were wrecked; 4 driven on shore, but got off; and 2 sunk.—*Portsmouth Herald.*

The following number of flag officers and men of war on the Naval List, at the several dates enumerated:—

	Ad.	V.Ad.	Rr.-Ad.	Total
1st January, 1794	12	18	19	49
1st January, 1797	28	40	35	103
1st January, 1799	21	36	42	99
1st April, 1814	64	66	70	200
1st January, 1833	49	58	64	171

Number of Men of War.

1st Jan. 1794	495	1st April, 1814	1182
1st Jan. 1797	511	1st Jan. 1833	574
1st Jan. 1799	582		

Hants Tel.

The Swedish Army and Navy, on Jan. 1, 1832.—The first organization of a regular army is due to Charles XI. in 1680, in whose time it solely consisted of men billeted upon the landed proprietary. The latter, if possessed of an income of not less than £50 or £60 a year, are bound to provide one soldier with a small dwelling, a piece of ground, and certain necessaries. The quota has been increased by adding men who have been enrolled, as well as such as are drawn by ballot under the conscription law. The army is at present composed of 32,694 men, inclusive of 2,580 artillery, 4,705 cavalry, and 25,409 infantry. Of this force 26,914 are quartered with the landowners, and 5,780 are recruits. Independently of these troops, the five classes of conscripts furnish 95,518 men fit for service. The army is divided into three regiments of artillery, eight of cavalry, and 25 of infantry. Each regiment, in addition to the two or three towns assigned to it for its quarters, is under directions to assemble occasionally *en corps* at some given spot. The whole army, with the exception of the artillery and foot-guards, being dispersed at its several quarters, a regular rendezvous of the whole is ordered at a certain period, either at Stockholm, Christianstadt, or Wenersborg. The officers of the navy consist of 1 Admiral, 3 Vice-Admirals, 4 Rear-Admirals, 24 Captains-Commandant, 16 Captains, and 176 Lieutenants, divided into two classes; besides 38 officers of marines. The naval force comprises a corps of artillery of 955 men, and a corps of marines of 550; 360 naval cadets, 5,694 sailors quartered on the inhabitants in the country, and 892 on townsmen; 1,505 termed extraordinary men, and 11,580 sailors of all ages. Including every individual employed in the navy, its whole strength is 23,005. The number and class of ships is as follow:—10 of the line, 4 large frigates, 5 light frigates, 10 sloops or brigs, 5 cutters, 24 galleys, 4 semi-galley 25 decked gun-boats, 200 gun-boats without decks, and 155 other vessels.—*Ports. Her.*

Births.

At Lincoln, lately, the lady of H. B. H. Long, Esq., Purser, Royal Navy, of a daughter.

At Prisk, in Mullion, the lady of Captain Head, R.N., of a son.

Lately, in Cobourg-street, Plymouth, the lady of Lieut. Thomas, R.N., of a son.

Lately, at Swiss Cottage, Bembridge, Isle of Wight, the lady of J. Kidd, Surgeon R.N., of a son.

On the 29th ult. on the Topsham Road near Exeter, the lady of E. K. Foley, Esq. R.N. of a son.

On the 13th ult. at the Wilderness, Reigate, the lady of Captain Thomas Martin, R.N., of a son.

At Enniskerry Lodge, county of Wicklow, the lady of Captain Thomas Monck Mason, R.N., of a daughter.

At Flushing, the lady of Lieut. Forster, commander of H.M. brig Lapwing, of a daughter.

Marriages.

Lately, Charles Stark, Esq. Mathematical Instructor in Naval Gunnery, H.M.S. Excellent, to Maria Clark, daughter of Com. Felix Franklin, R.N.

At Edmonton Church, Capt. Deare, R.N. to Margaret, second daughter of the late Robt. Mushet, Esq., of the Royal Mint.

At Stoke Church, Lieut. Venus, R.N. to Miss Robinson, of Gloucester-street, Portsea.

On the 14th ult., at Lamesley Chapel, in the county of Durham, by the Hon. and Rev. Mr. Liddell, Capt. Yorke, R.N. and M.P. for Cambridgeshire, to the Hon. Susan Liddell.

At Kirkaldy, on Tuesday the 9th ult. Josh. Cook, Esq. Surgeon R.N. to Jean, daughter of James M'Donald, Esq., Perth.

At Sherbourne, Warwickshire, Captain F. W. Rooke, R.N. to Harriet, fifth daughter of the late N. Hyde, Esq., of Ardwick, Lancashire.

On the 24th ult., at Brighton, by the Rev. H. M. Wagner, Lieut. Patric Inglis, R.N. son of Commissioner Inglis, to Mary Ann, only daughter of the late J. Cocks, Esq., R.N.

At Bryanston, Dorset, L. Halladay, Esq. R.N. to Sophia Noel, grand-daughter of the late Lord Wentworth.

Lately, at Stoke Church, near Guildford, Lieut. William Preston, R.N. second son of Admiral Preston, to Hamilla Mary, youngest daughter of James Mangle, Esq. M.P. of Woodbridge.

Deaths.

Lately, at Ipswich, Robert H. Gower, Esq., formerly a chief officer in the service of the Hon. East India Company, and inventor of the four-masted vessel Transit, which he commanded until his retirement from the sea. In a published account of this vessel, it appears that she excelled in many good qualities; and, in 1808, the Admiralty, upon his representations, ordered a similar vessel, of 272 tons burden, to be constructed under his superintendence at Ipswich. The second Transit, however, certainly did not realize the expectations which had been formed of her: but, in palliation of the failure, it may be stated, that her projector was provokingly thwarted during the progress of the experiment. He possessed very sensitive feelings, and, stung to the quick by the above system of petty opposition, he set forth his wrongs in a spirited pamphlet, entitled "Narrative of a Mode pursued by the British Government, to effect Improvements in Naval Architecture." In 1820, the Hon. John Vernon built the third Transit, of about the same tonnage, for a yacht, at Ipswich, and also under the inspection of Mr. Gower. This vessel was three-masted, but in other respects resembled those which had preceded her. The most striking peculiarities she exhibited were, that the lower shrowds were set up with spar-shackles; the cloths of her sails were horizontally placed, on the plan of Captain Cowan, R.N.; her gaffs also were horizontal. But, to a seaman's eye, her most novel feature was a *wooden* mainstay. The writer of this tribute to the memory of a worthy man, never learned the ascertained qualities of this vessel. Mr. Gower published a "Treatise on the Theory and Practice of Seamanship," and Supplement to it; in which he illustrated the subject by an original and simple diagram, having a moveable part attached to it, by the aid of which the student was enabled to perform in miniature the principal manœuvres of a ship. Mr. Gower was an accomplished seaman and navigator, and possessed considerable acquirements in astronomical and mechanical science.

At Newton, Bishop's Tawnton, Mr. Thos. Smith, formerly Surgeon, R.N.

At Glenties, Donegal, Capt. S. Folvil, R.N. (1802.)

In Dublin, Commander Goddard Blennerhasset, R.N. (1808) son-in-law of Sir A. B. King, Bart.

On the 23d ult. Commander Thos. Stephenson (1825.)

At his residence, Tamar-terrace, Plymouth, in the 71st year of his age, George Mitchener, Esq., Purser, R.N.

In Percy-street, London, Com. Vincent Newton, R.N.

Lately, on the coast of Africa, of fever, Mr. George Laurie, Assistant-Surgeon of H.M.S. Curlew.

On the 15th of June, on board H.M.S. Curlew, at Cape Lopez, Mr. Thomas Johnson, Acting Purser of that ship. His death was caused by the blowing up of a piratical vessel, whilst doing duty on board her.

A few days ago, Mr. John Buyers, (1805.) Master, R.N.

On the 27th ult. at East Ilsley, Berkshire, Lieut. Charles Hemstead, R.N. Governor of Naval Knights of Windsor, aged 57.

At Tralee, R. C. Connell, retired Surgeon, R.N., aged 93.

A few days since, at Taunton, aged 78, Joseph Whidbey, Esq., 54 years a Master in the Navy, and many years Superintendent of the works of Plymouth Breakwater. Mr. Whidbey was made a master in 1799, and was long a master-attendant, having previously accompanied Capt. Vancouver in his voyage of discovery round the globe; his general high character, zeal, and skill, as an officer and a gentleman, led to his appointment and pension as above, and the respect and esteem of all who knew his real worth, and kind and liberal heart.

On Sunday, the 20th ult., at Southampton, George Ridsdale Barden, Esq. Purser, R.N. after a protracted illness, which he sustained with Christian resignation.

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THE

NAUTICAL MAGAZINE,

&c.

DECEMBER, 1833.

HYDROGRAPHY.

Note.—All bearings are Magnetic, unless otherwise stated.

75.—AUSTRALIAN NAVIGATION. *Journal of His Majesty's Ship Crocodile, Capt. J. W. Montagu, with a Convoy from Sydney, through Torres Strait, by the Inner Passage.*

IN a former number[*] of our work, we presented our nautical readers with a letter from Captain King, R.N., recommending to their attention the Inner Passage from Sydney, through Torres Strait. The well-known accuracy of Captain King, and the experience which he has obtained of that navigation, made us anxious to call their attention to it; and we believe that we can do nothing better towards promoting his views, than by laying before them the journal of his Majesty's ship Crocodile, which ship used that passage with a convoy of merchantmen. The loss of the ship Flora, which was related in our October number, afforded one, among the many fatal instances that result from adopting the outer passage; and the Agnes,[†] alluded to in the same narrative, met with a similar fate. The following journal will serve to render the navigation in some degree familiar to the commanders of our ships, and we hope will assist those unacquainted with the passage, by relieving them from much alarm respecting its numerous dangers.

Journal of H.M.S. Crocodile, while passing through the Inner Passage to Torres Strait.

On the 3d of July, 1830, the Crocodile sailed from Port Jackson, in company with eight merchant ships, which took this opportunity of sailing through the Strait. On the noon of the 9th, the fleet had reached up to Sandy Cape, and, passing a quarter of a mile along the east side of Break-Sea-Spit, rounded its north end within one cable's length, hauling in to the northward for Round Hill. Lady Elliot Island, discovered by the ship Lady Elliot in 1816, was distinctly seen. Having had a fresh wind from the east-ward through the day, the fleet was close under Round Hill at midnight, having made the coast hereabouts with ease; and our position being well determined, we hauled off for two miles and a half, and then shaped a direct course for Cape Capricorn. We arrived abreast of it by 9 A.M. on the 10th, from whence the Investigator's track was followed up to the Keppel Islands, and to Cape Manifold, and under which we anchored for the evening. The outer extreme of the Cape bore E. 22° S. (mag.) 1½ mile, in eleven fathoms. The fleet experienced much swell during the night.

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[*] Nautical Magazine, No. 18.

[†] No. 50 of our table of Wrecks of British Shipping.

At daybreak, on July 11, under way from Cape Manifold, and, following the track of yesterday, arrived at noon abreast of Cape Townshend; from which, forming a direct course for the Percy Islands, anchored in the evening under the west side of the southernmost of that group, in eleven fathoms, half a mile off shore. The Percy Islands have a very verdant and fertile appearance, and abound in wood.

At daybreak on the 12th, under way from the Percies, but the wind turning out light and variable, we made but little way. In the evening we anchored under the northern island of the cluster immediately south of Beverly Group, and which cluster is but imperfectly delineated in Captain King's chart, sheet No. 1, published in 1824. The island we landed upon is peaked, and in some parts moderately wooded, and produces a profusion of very long Kangaroo grass, much esteemed in the colony. It is frequented by the natives of the main land, and, from its soil and luxuriance of vegetation, seems to possess great capabilities.

A fresh wind sprung up early on the 13th, and carried the fleet rapidly past the Prudhoe Islands, which we passed to the eastward. In this route we frequently discovered the water to be very much discoloured, and repeatedly sheered out or in to the land. It appeared to arise, however, from the agitation of the water on the peculiar nature of the bottom, as the soundings were regular. At noon we observed, in latitude 20° 58′ south, and 149° 30′ east; in which position several islets were seen south of the island l r of the chart, not inserted therein;* also an islet and rock bore S. by W. 2½ miles distant. There are also some other irregularities in this vicinity, which, the rapidity of our passing, and the nature of this navigation, did not permit us to correct. Having rounded the high-peaked island l r, we hauled in to the westward, and at sunset anchored in twelve fathoms off the island m of the chart, with an elevated peak of 874 feet, altogether one of the most beautiful islands we had hitherto met with. The peak bore E.N.E., six miles and a half distant. During the night there was some swell, and a rapid tide.

July 14. Some delay occurred this morning by the ship George Canning being unable to purchase her anchor, having hooked a coral patch, and capsized her windlass. This occurrence caused us to lose a whole tide, and shortened the day's run so much, that we could only fetch to an anchorage in the evening under Cape Conway, in eleven fathoms. The Cape bore east 67° N., and the north Repulse Island west 10° south (magnetic.) The tide ran one knot and a half per hour.

At daybreak on the 15th, under way from Cape Conway, and entered Whitsunday Passage with a fresh southerly breeze. Fires, and other indications, seemed to prove this part of the country well peopled. On either side the strait the scenery is luxurious and picturesque. On the main the land rises into mountains of gentle acclivity, but covered with dense forests. The islands are of moderate height, and covered with rich foliage. The windings of the coast, and the straits between the islands, seem to offer security against any winds. And, altogether, it appeared the most eligible position that is to be met with beyond the present bounds of the colony, up to this latitude, for a settlement.

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* Capt. King is aware of this, and expresses his regret in his work that he could not examine them.—ED.

We cleared the passage without difficulty, and at noon Cape Gloucester bore west, nine miles distant. In the afternoon we saw Holbourne Island. Passing six miles and a half inside of it, and having a clear run for the night, shaped a course for Cape Bowling-Green, but made little way on account of the wind falling light.

At noon, on the 16th of July, Cape Bowling-Green bore south 2½ miles. From hence we continued our route to Cape Cleveland and the Family Islands, without anchoring until the evening of the 17th, when we came to for the night, in 7 fathoms, off Barnard Group; having followed, in general, Captain King's outside track. A solitary native came off from Double Point, in a small basket-canoe which he paddled by hand: his real object was not ascertained, but, having obtained some old rags and a few biscuits, he paddled back to his companions on the beach, who appeared to watch his return with anxiety.

On the morning of the 18th July, under way from Barnard Group, and followed the inshore track up to Frankland Reefs, and arrived abreast of them at 2 P.M. About this time we observed the wreck of the colonial shooner Mermaid, on a reef nearly dry, six and a half or seven miles to the eastward of Frankland Reef.

The weather was hazy, and the land obscured, so that it was impossible to give this reef any satisfactory position, other than by the log account, from which the above is determined. Having closed the wreck sufficiently to observe she was deserted, we resumed our course to the northward, and in the evening came to in 19 fathoms, within Fitzroy Island, three quarters of a mile off its west end. This island is bold and elevated, and covered with wood.

July 19. At daybreak under way from Fitzroy Island, and followed Captain King's route up to Snapper Island, Cape Tribulation, and the Hope Islands, off which we came to in the evening in 10 fathoms. The S.E. Island S.E. by S.; and N.E. ditto, E. ½ N. We had a troublesome swell during the night.

July 20. Under way early with the fleet, and took the inside route up to Endeavour River, passing within the shoal d of the chart, and then edging away for Cape Bedford. From this Cape, we followed the centre track up to Lizard Island, and came to in 11 fathoms, off its west side. The north point of the island E. 55° N.; south point of it, S E. by S. ½ S.; and Eagle Island S.W. by W.

July 21. On leaving Lizard Island, and steering over towards Howick Group, we passed to the north of Eagle Island, and the other dangers thereabout; keeping in Captain King's track up to Cape Melville, and passing close round the spit extending from that Cape, on which spit there are several very remarkable rocks above water; and from thence, steering over to Cape Flinders, anchored under its west side for the night, with the Cape bearing N.N.E. 1½ mile.

July 22. During great part of this day the wind was light and baffling; but by 5 P.M. we had reached over to the island No. 3 of the chart, in lat. 13° 47′ south, under which we had tolerable anchorage for the night in 11 fathoms. Its centre E. by N. ½ N. per compass, three quarters of a mile distant, Janes Hill, an elevated table-land, distinctly marked in the chart of Captain King, was found this day to be a very valuable sea-mark

July 23. Under way at daylight, and proceeded by the middle route of the chart up to the Claremont Islands. On nearing Cape Sidmouth, we observed the wreck of a large ship on its south side; and about the same time saw a small vessel under sail, making from her. With the idea that some assistance might be required, we anchored under the small sandy islet in lat. 13° 21′ south, and long. 143° 37′ east; on which a tent was observed to be pitched, and a flagstaff erected, and thither the above vessel was directing her course. She was found to be a wrecker from Sydney, and the wreck was that of the ship Swiftsure, cast away in July last year on a bank off this Cape that does not appear in the chart. Finding no cause for delay, the fleet was under way before noon, with a moderate S.E. wind, and still following Captain King's route, reached Cape Weymouth in the evening, and anchored under it for the night, in 7 fathoms. The Cape on with the inner extreme of Restoration Island E. by S. ½ S. two-thirds of a mile.

July 24. At 9 the fleet was under sail, and by noon reached up to Fair Cape, in latitude 12° 25′ south. At 1 h. 45 m. we approached Piper Island, the reefs about which were remarked to be more extensive than represented in the chart, and caused some hesitation with respect to passing them, before we attempted it; and, for the purpose of inspecting them more particularly, we brought the fleet to the wind, and, standing along their weather edge, discovered the most eligible passage to be to the eastward of them, and to the westward of h, i, and h, islets or banks, in a good and clear passage, bounded by reefs on either side, which, though under water, are shewn with great distinctness by the discoloration. We passed close under the east side of Young Island. The bush mentioned by Captain King was seen, as well as the other circumstances alluded to in his narrative. Having passed Haggerstone Island, and Sir Edward Horne Islands, the fleet stood in for, and anchored under the west side of Sunday Island, its centre E. by S. ½ S., one mile and four-fifths. Margaret Bay affords good shelter, but the country hereabout is of a very forbidding appearance; sandy, sterile, and arid. Several native's fires were observed some short distance inland.

July 25. Under way at daylight, and took the inshore track of Captain Cook up to Cairn-Cross Island, passing close along the edge of the shoal and islet v, in order to avoid the reefs of the Hannibal Islands. Pudding-Pan Hill (of Captain Bligh) is an elevated table-land, very remarkable, and easily distinguished; but we could observe nothing about it to warrant its fanciful appellation. By 1 P.M. we came abreast of Cairn-Cross Island, passing between it and 7, and then edging away to the N.N W. for the Turtle Islands, passing within the reef x. In approaching the Albany Islets, we fell in with the barque Wanstead, on her passage from Van Diemen's Land to Singapore. She had entered the straits by the way of Murray's Island, and had experienced some bad weather after her entry, by which she lost an anchor and chain-cable.

Having rounded the Albany Islets, and kept well to the northward, to avoid the small shoal laid down in the chart, between Cape York and the York Islands, and hauling in under the Cape, anchored for the night in 5½ fathoms, the Cape bearing E. ½ S.; the peaked hill at the entrance of Endeavour Strait, S.E. ½ S. Here the water was perfectly smooth, and the anchorage good and secure. The country hereabout is verdant and well-wooded, and appears to be populous, as fires were observed in every direction.

July 26. Under way about 6 A.M. from Cape York, with the fleet, joined by the Wanstead, and shaped a course for Wednesday Island; but, soon after the ships were under sail, light and variable winds ensued, which obliged us to traverse on either side of Captain King's track, and several times we tacked short of, or bore away from discoloured patches, which probably were caused only by the bottom being disturbed by the current. For so far as our observations went, this part of the straits has been very carefully sounded. About 10 the breeze freshened up from the eastward, and the fleet passed with celerity round Wednesday, Hummond, and Good Islands, on which large parties of natives were assembled, who, by hailing, by signs, and gestures, appeared very anxious that we should communicate with them.

The shoal d, north of Hummond and Good Islands, must be carefully regarded in passing this contracted part of the straits. It shewed itself distinctly by the discoloration, yet was not perceived until we had approached it very closely, notwithstanding a special look-out was kept for it. This, however, is the last danger properly belonging to the straits, and on clearing it the passage may be regarded as over.

By noon we were abreast of Booby Island, and, passing along its north side, observed two small flags flying upon it, and a bottle deposited at the base of one of the staves—the memorial, as we supposed, of vessels that had lately passed through the straits. We made no stop, but, immediately after clearing Booby Island, the ships respectively made all possible sail, and dispersed on their separate destinations.

Too much praise cannot be given to Captains King and Flinders, for their surveys of this most intricate coast; and from the experience we had of the inshore passage, we do not hesitate to recommend it; but all ships should have Captain King's book of sailing directions to accompany the charts. We anchored sixteen times after entering at Break-Sea-Spit, on the 9th, and were clear of all dangers by noon of the 26th July, when the convoy parted company.

76.—NIELSON REEF,* PACIFIC OCEAN, LAT. 27° S., LONG. 146° 17′ W.

To the Editor of the Nautical Magazine.

Sir—Observing, in the course of looking over a few numbers of your valuable magazine, that it has become a grand repository of facts most valuable to science and humanity, I take the opportunity of forwarding to you the situation of an extensive and dangerous coral reef, of which, in the course of my observations, I have seen no notice in any chart; and as it lies direct in the course of vessels leaving the Society Isles, homeward bound, round the Horn, I doubt not you will give it publicity, for the purpose of putting masters of vessels on their guard against so formidable a danger.

Extract from Journal of the Ship Sir George Osborne.

"January 19, 1827. On our passage from Tahiti to England round Cape Horn. Light breezes, and fine clear weather. Latitude observed, 26° 33′ S., longitude, 146° 25′ 45″ W. At 6 P.M. observed a heavy swell, which proved to be caused by the sea breaking on a coral reef; hauled off on the larboard-tack, and passed between two portions of the reef nearly level with the water. White coral observed under the ship, from four to six fathoms; the reef extending a considerable distance, curving S.E. in form of a crescent as far as the eye could reach from the masthead. The sea being perfectly smooth, shewed itself by rollers, only occasionally breaking. Its situation, 27° 0′ south latitude, 146° 16′ 45″ west longitude, by chronometer."

We named it Nielson's Reef, the name of the master.

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* The ship Lancaster struck on this reef in 1831. The weather being fine, the sea did not break on it. The least water she found was 12 feet.—ED.

As a proof of the correctness of our time-keepers, we had only left Tahiti five days, and made our passage in 113 days, without sighting land until we made the Start point.

The time which has been allowed to elapse is in consequence of expecting to see it placed in modern charts from information given by the captain, and from the intervention of other avocations.

I remain yours,
S. Stutchbury,
At the time, Naturalist on board the Pacific Pearl Company's ship, Sir George Osborne, James Nielson, Commander.

8, *Cumberland Terrace, New River, Bristol,*
November 12, 1833.

77.—Rocks between Tristan D'Acunha and the Cape of Good Hope.

The following is worth the attention of navigators:—

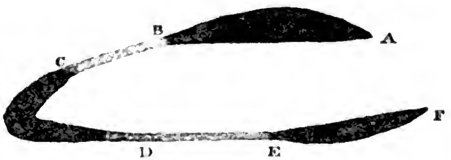
Extract from the Log of the barque Ann from Liverpool towards the Isle of France, 1829, *Capt. W. W. Robson.*

Monday, 12th October. Made Tristan D'Acunha, the longitude by chronometer differing from the chart, but exactly agreeing with Capt. Heywood's.

In the chart, Inaccessible Island was laid down as five miles east of Tristan d'Acunha, but it was found to lie actually five miles west of it.

Sunday, 18th October. At 9 h. 30 m. A. M. in lat. 37° 35′ S., long. (ascertained by the same chronometer which assigned the long. of Tristan d'Acunha in accordance with Captain Heywood) 7° 30′ E. The vessel steering E.S.E. by compass, and running nearly nine knots. Saw on the lee-bow what was at first supposed to be whales, but, when a short distance from them, discovered them plainly to be rocks, the highest part about eight feet above water; luffed, and cleared them by about fifty yards. The sea broke heavy on them, *and there was tangle eight or nine feet long growing on the rocks.*

They are about fifty or sixty yards long, something in the annexed shape, with the opening to the S.E.



References.

From C round to D. Rock about six feet high above water.
From C to B. A kind of neck, level with the water.
From A to B. The highest part of the rock about eight, or perhaps even ten feet above water.
From D to E. Neck level with the water.

From E to F. Rock about six or seven feet above water.

At A and F. *Tangle eight or nine feet long growing on the rocks.*

N.B. The Hibernia Rock laid down as doubtful in the same parallel of latitude, about 10° of longitude to the westward, Captain Robson thinks may probably be the same, but erroneously placed in long.

78.—REMARKS ON THE HARBOUR AND RIVER PARAIBA DO NORTE. *By Commander the Hon. F. F. de Roos, R.N.*

The River Paraiba do Norte, which is situated sixty-seven miles north of Pernambuco, has an extensive commerce, and is generally visited by ships homeward bound from that port, to complete their cargoes. Vessels drawing 16½ feet water can safely enter at the springs.

The coast here trends north and south, and the direction of the river is S.S.W. nearly in a straight line. On the south point (Balea) of the entrance, which is low, sandy, and wooded, is built the strong fortress of Cabedello. The north point is also low, with cocoa-nut trees upon it; but immediately behind is some high wooded-land, on the point of which the remarkable Convent da Guia is distinctly seen. The Barrier reef terminates abreast of the south point, when the bar commences, and continues till it reaches the extensive shoals which stretch out from Point Sucena.

Ships approaching from the south are recommended to make Cape Branco, which is four leagues south of Cabedello. It is a remarkable point, with two cocoa-nut trees upon the very extremity. From the northward the latitude may be run down when Cabedello Fort will appear. It is the only fortress for many leagues upon the coast, which otherwise bears a great sameness of appearance. Ships should on no account venture into less than six fathoms water.

A gun fired will bring off a pilot: they come in jangadoes from the Cocoa village to the south of the fort, and are considered expert and trustworthy.

The bar is at some distance from the land, and, as the passage is tortuous, it is not safe to attempt to enter without a pilot. On it there is eight feet water at low-water spring-tides.

The bottom is sand, in some spots hard. There are breakers on either hand, and the marks which are given are difficult to distinguish, and therefore not to be depended upon.

The land winds are not of frequent occurrence. Vessels, therefore, have generally to beat out against the prevailing N.E. wind, which blows steadily. His Majesty's sloop Algerine, working out in October, 1832, made twenty-one tacks.

It is usual for all ships entering to anchor off the Port Cabedello, in order to be visited; after this they are at liberty to proceed up the river. H.M. sloop Algerine was anchored with the fort bearing, by compass, S. 60° E., distant a quarter of a mile, in five and a half fathoms. Bad water, and few supplies are to be found at this place.

A different pilot is appointed to take vessels up the river, which, as the wind is generally fair, is an operation of little difficulty or danger, and is almost always effected in one tide. The two shoalest spots are situated, one just above Cabedello, and the other abreast of the entrance of the Tambia river. Going down is tedious, as ships have beating winds, but the reaches are long. The bottom throughout is soft mud.

It is necessary to warp into the anchorage off the city, which is perfectly sheltered and secure. Indeed the only vessel ever lost in the river was one which, by inadvertence, grounded upon her anchor, and foundered.

Water is to be procured by sending boats with casks up the rivers. That of the Tambia is celebrated for its purity. Provisions may be had in abundance, and at a very moderate rate.

We had no opportunity of ascertaining the latitude of Cabedello, but have assumed it, after Baron Roussin, to be 6° 57′ 50″ S. The difference of longitude measured from Cabedello to the light-house of Pernambuco, by three good chronometers, makes it 5ˢ,9, or 1′ 28″,5 to the eastward, which, allowing that place to be in 34° 51′, gives the longitude of Cabedello 34° 50′,5. The variation of the compass we observed to be 5° 14′ W.

79.—NAVIGATION OF THE GULL STREAM.

"*Trinity-House, London, 5th November*, 1833.

"Notice is hereby given, that a Chequered Red and White Buoy has been placed about midway between the north and south brake buoys, on the eastern side of the brake sand, in five fathoms at low-water spring-tides, with the following marks and compass bearings, viz.:—

North Foreland Light-House	N. b. E. ¾ E.
Gull Light-Vessel	S.E. ¼ S.
South Foreland High Light-House	S.W.
Ash Church, its length to the northward of a White Mill	W.N.W.
Ramsgate Pier Light-House on Sackett's Library	N. ½ W.
North Brake Buoy	N.N.E. ¾ E.
South Brake Buoy	S.W. b. S. Southerly.
Waldershare Monument on the Northernmost House in No. 2 Battery, which stands about half a Mile to the Northward of Sandown Castle . . .	W. b. S. ½ S.

"The White Buoy on the Brake Knoll has been taken away, and the South Brake Buoy has been moved further out: it now lies in five fathoms at low-water, on the outer part of a knoll at the tail of the Brake Sand, with the following marks and compass bearings, viz.:—

Gooch's House on Prospect House	N. b. E. ¾ E.
North Foreland Light-House	N. b. E. ¾ E.
Gull Light-Vessel	E.N.E.
Fork Buoy	S.E.
South Foreland High Light-House on the middle of the Cliff Northward of Old Stairs Bay . .	S.W. ¼ W.
Mongeham Church, on the Northernmost House at Deal	W. b. S.
Ramsgate Pier Light-House, its length on the Chancel end of the New Church	N. ½ E.

"Vessels, when nearing this buoy from the Gull Stream, should not bring it to bear to the southward of S.W., and they should never cross the shoal to the northward of it.

"The Buoy of the Fork lies in 6¾ fathoms at low water, with the following marks and compass bearings, viz.:—

The Gull Light-Vessel	N.E. ½ N.
South Sand Head Light-Vessel	S.S.W. ¼ W.
South Foreland High Light-House	S.W. ¾ W.

Upper Deal Mill, touching the South Side of the Lower Mill at Deal	W. b. S.
Waldershare Tower, its apparent breadth open to the Southward of Upper Deal Church . . .	W. ¼ S.
South Brake Buoy	N.W.
Ramsgate Pier Light-House on St. Lawrence Mill	North.
North Foreland Light-House	N. b. E. ½ E.

"When between the Gull Light-Vessel and the Fork, ships or vessels should not stand nearer to the Bunt Head than eight fathoms water.

"By Order, "J. HERBERT, Secretary."

80.—TULLOCK ROCKS. *Reported in Lat.* 37° 25′ N., *Long.* 24° 45′ W.

To the Editor of the Nautical Magazine.

Sir—I observe, that in the Nautical Magazine,* Tullock's Rocks, near the Açores, are stated as above water, and that on seemingly good grounds their existence is doubted.

On this I remark, that Mr. Tullock himself expressly stated some years since, "that all the twenty-one heads of rocks he counted were under water, but that two of them shewed in the hollow of the sea. That they were of a black cindery appearance." And he even, adverting to the then late rise and subsidence of Sabrina Island, suggested, "that they might be of recent origin, and might perhaps disappear; but at all events he saw them plainly, and escaped narrowly enough from them."

The other authorities quoted in Mr. Purdy's North Atlantic Memoir sufficiently corroborate Mr. Tullock's veracity, (were that needful,) and also the accuracy of the bearings and distance he assigned to the rocks from the highest rock of the Formigas.

[We did not doubt the existence of these rocks, but regretted that the Ariadne was not so successful as to find them, and we cautioned navigators against "undiscovered dangers near the Formigas."]—ED.

REEF NEAR ROCKALL.†

Extract from the Log-book of the Emperor Alexander, of Aberdeen, Lachlan M'Kinnan, Master.

April 8, 1832. Saw Rockall bearing W.N.W., distant four leagues; and Long Reef, breaking occasionally, bearing from the ship N.W. by W. ½ W., distant eight miles, and about four miles from Rockall.

At intervals the sea did not break on the reef, but it broke frequently very heavily, and with long rolling white seas, like breach upon a bar, for about six or seven ships' lengths.

The sea broke in no other place at that time within sight. The bearings are by compass.

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* P. 169, Vol. i.

† In an early number, we propose giving some account of Captain Vidal's examination of the Rockall bank. In the mean time, we believe that his chart of it will shortly be published by the Admiralty.

⁂ *With the view of making the most of our limited space, we have determined on omitting our tide-table in future, as it is but of temporary and local importance, to the exclusion of notices more generally interesting to seamen.* —ED. OF NAUT. MAG.

VOYAGES AND MARITIME PAPERS.

I.—On the Risk and General Policy of our recent Arctic Expeditions.

The first announcement of Captain Ross's return in the newspapers was followed up by a paragraph, expressing an earnest hope that this would be the last of such useless, rash, and unprofitable expeditions.

We have long been aware that such were the prevailing sentiments of three several classes in society, viz : 1st, Those who, from religious motives, consider any risk of life as an unwarrantable temptation of Providence. 2d, Those who look to the effect of measures through the sole medium of pounds, shillings, and pence. And 3d, A numerous assemblage of minor objectors, who, without giving themselves much trouble in sifting the real merits or demerits of the case, cut the Gordian knot by that most vague and disheartening of all answers *Cui bono?* an answer which has, in every age, done its best to paralyze genius, and close the door of inquiry upon every subject and object, the immediate effects of which do not come within the sphere of the most ordinary comprehension. But, in addition to these three classes, it is with pain and sorrow that we have now to add the recorded sentiments of the public press: this last, though by no means least influential portion of the community, thus laying its fatal axe to the root of a chivalrous spirit, which has heretofore had so large a share in exalting the British character among the nations of the civilized and enlightened world.

To suppose that the arguments of unknown individuals can weigh aught in opposition to the verdicts of so formidable a coalition, would be vain presumption; but, under a deep and abiding conviction, that, with the encouragement of British enterprise, much of what may yet remain of Britain's future glory is identified, we would fain offer a contributory mite to the "audi alteram partem" side of this important question.

First, then, How does the case stand with respect to the actual expenditure of human life? We have facts before us, and to them be the appeal.

From an accurate investigation of the deaths occurring in the district wherein we reside, they appear to be in the proportion of about 1 in 38. From the statistical reports of the metropolis, they are in the proportion of 1 in 40: but there is good reason for concluding that the number is far greater, there being prodigious omissions in the records of burials.* In Liverpool, in 1830, the proportion was nearly 1 in 38: but, as its returns are liable to the inaccuracies existing in London, the number of deaths may fairly be computed as exceeding this ratio. We will, however, take them as 1 in 40.

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* See Annals of Philosophy—Lubbock's remarks on mortality.

With these data, let us now refer to the actual mortality during a period of fifteen years, from 1818 to 1833, which will comprise the expeditions of Ross, Parry, Franklin, Lyon, and Weddell.

Ross, 1818, *absent seven months.*

Isabella, 57
Alexander, 37
Total, 94 men. Not an officer or man on sick list.

Ross, 1829 *to* 1833, *absent four years and a half.*

Victory, 23 men.—Of whom three only died, though exposed to every degree of privation and hardship; and, to use Captain Ross's words, "as two out of these three were cut off early in the voyage, by diseases not peculiar to the climate, only one man can be said to have perished."

Parry, 1819, 1820—*absent two years.*

Hecla, 58
Griper, 36
Total, 94 men.

Of these, one only died, and his lungs were diseased before he embarked.

Parry, 1821, 1822, 1823—*absent three years.*

Hecla, 60
Fury, 58
Total, 118.

Five deaths occurred: of which, one was by an accident; one consumption; one pulmonary affection, increased by intemperate habits; one would not take proper medicines.

Parry, 1824, 1825—*absent two years.*

Hecla, 62
Fury, 60
Total, 122.

One death only, and that hastened by an accident.

Parry, 1827—*absent seven months.*

Hecla,* 34
Boats, 28
Total, 62.

One death on board the ship, where there were no privations. The individual had been in every one of the previous expeditions.

Franklin—absent two years.

We cannot speak with similar accuracy respecting this land expedition, the actual number of followers not being stated; and as they varied according to circumstances occasionally, it might be impossible to come at the exact truth, but we are probably not far wrong in computing them at about twenty; of whom four died—two of them from gun-shot wounds. As, however, it is not improbable that the deaths of these two were more or less connected with the peculiar hardships to which they were exposed, we will consider the whole four to have died of privation.

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* We have considered the Hecla's complement to be the same as in 1824, viz. 62 men, as we are not aware that any addition was made in consequence of the boat establishment.

Lyon, 1824—*absent five months.*

Griper, 41 men. No deaths.

That the vessel was exposed to dreadful weather, and that the crew suffered in consequence, is well known; but so far from affecting their spirits, Captain Lyon closes his interesting narrative thus: "I may with truth assert, that there never was a happier little community than that assembled in the Griper; each succeeding day, and each escape from difficulties, seemed to bind us more strongly together; and I am proud to say, that during the whole of our voyage, neither punishment, complaint, nor even a dispute of any kind, occurred amongst us."

Weddell—absent nearly two years.

Jane,..	brig,	160 tons,	22	Total, 35.
Beaufoy,	cutter,	65 tons.	13	

With the exception of this last, these expeditions were sanctioned by Government; but Mr. Weddell, who, we are proud to add, was a Master in the Royal Navy, ventured in a private capacity with the two little vessels above named, one almost a cock-boat, to explore the southern regions, "as full of peril and adventurous spirit," as those of "thrice-ribbed ice," in breaking whose frozen barriers, his gallant messmates had so nobly distinguished themselves. And, during so long an absence, with such limited means and accommodations, we hear only of the loss of one man, who had been for many months in a consumption. Mr. Weddell, too, had no martial law to enforce discipline; but true British spirit rendered its absence of no moment; for, "never, during my experience at sea," he observes, "have I seen an equal degree of patience and firmness, as was exhibited by these seamen. No dastardly request to reach a better climate was ever hinted at; but they continued in the strictest obedience and determination to make light of difficulties."

We might, in addition to the above, mention the expedition under Captain King, in the Adventure and Beagle, who was absent about four years, and chiefly occupied in surveying the cheerless shores of Terra del Fuego; but we omit it, as his volume is yet to appear, and we have therefore at present no certain data for reference; though we have reason to believe that his deaths were limited to a boat's crew, upset in a squall in the Straits of Magellan, and a man who fell from the foretop-sailyard, when the vessel was getting under way in Gravesend Reach, preparatory to coming to her final anchorage at Woolwich the same evening.

The following is a summary made out from the above details:

Year in which the Expedition Sailed.	Under the Command of	No. of Men on Expedition.	Absent.		Deaths by Causes or Disorders unconnected with the Expedition.	Deaths occasioned directly or indirectly by the Expedition.	Rate of Deaths at average of 1 in 40.
			Y.	M.			
1818	Ross	94	0	7	0	0	1¼
1829	Ross	23	4	6	2	1	3
1819	Parry	94	2	0	1	0	5
1821	Parry	118	3	0	3	2	9
1824	Parry	122	2	0	1	0	6
1827	Parry	62	0	7	1	0	1
1819	Franklin	20	2	0	0	4	1
1824	Lyon	41	0	5	0	0	0½
1822	Weddell	35	2	0	1	0	1
					9	7	
		Total . . .			16		27¾

Here, then, we find, that, according to statistical calculations, the deaths in these several expeditions ought to have amounted to twenty-seven and three-quarters, whereas they did not much exceed half that number; and, moreover, that of these, seven only were fairly to be laid to the account of sickness, or other causes directly connected with the peculiar risks and hardships of the service in which the individuals were engaged. It may indeed be said, that our average is unfair, inasmuch as the crews of such vessels are generally picked men, in the prime of life, and that the majority of deaths occur at an earlier age. But, in addition to the allowance already made for this in the average taken, viz. 1 in 40, which, as we have shewn, would probably be nearer the truth, if taken at the least in about 1 in 38, it should be borne in mind, as a well-ascertained fact, that mortality materially increases among the poor, and diminishes among the affluent; and, therefore, that, had the above number of individuals (the great majority of whom were not only of the poorer class, but of the proverbially most reckless, improvident, and irregular of that class*) been living on shore, under no control, following their usual course of life, at least double, if not treble the number, would have died. Here, then, instead of an expenditure, we have a most decided and a very considerable saving of human life.

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* Lord Nelson averaged the life of a sailor at forty years, on these considerations.

But further, respecting, as we do, those who from religious motives are hostile to these expeditions, we would suggest for their consideration, whether, had the mortality been equal to, or even exceeded, the average which "flesh is heir to" by the usual laws of nature, those who might have yielded up their lives in this their country's service, would not, in all likelihood, have been far better prepared for that awful change, than had they perished in the purlieus of the metropolis, or imbibed the seeds of their fate amidst the vices and iniquities so common in our sea-port towns. To say nothing of the moral and social order inherent in our naval discipline, is there nothing, we would further ask, of a moral or religious tendency incident to the peculiar situation in which such men were placed? Little, indeed, do these persons know of Franklin or of Parry, if they are ignorant of the devotional spirit which hallowed their exertions, and of the eternal benefit which may have accrued to those whose privilege it was to be one of their gallant followers.

However we may respect the prejudices, if so they may be called, of those to whom we have just appealed, with the money-calculating class who here unite with them, we have but little sympathy, and feel but little inclination in wasting time to convince such reasoners, that some ingredients there are in the formation of character, and exaltation of a people, of more worth and excellence than gold, or the incessant contemplation of profit and loss. But even on their own grounds, we fear not to meet these Shylocks, who look to nothing but the interest of their bond. For we have heard capitalists in the whale trade speak in the highest and most grateful terms of these expeditions, as calculated to open new sources of wealth to those who are engaged in this department of commerce;*

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* We are happy to make one exception from our assertion against the public press, and have great pleasure in quoting the following from the columns of the Liverpool Times:—

There is every reason to believe, that if the recent Arctic voyages had not been undertaken, the whale fishery which employs a capital of upwards of a million, which is one of the best nurseries in the world for seamen, and on which Hull, Peterhead, Frazerburgh, and several other towns of the kingdom, mainly depend, would have been totally lost to the country. For many years, a great change has been taking place in the habits of those stupendous creatures, which draw the enterprise of the merchants and mariners of England and Scotland into the Arctic seas. When the fishery commenced, they were so tame that they were found floating in all the gulfs and bays of Spitzbergen, fearless of harm, and were taken by hundreds, and without an effort. In a few years, however, this dreadful destruction drove them into the more remote bays, from whence they were soon driven into the open sea, far away from land. But the trackless ocean afforded them no shelter from their enemies; they were pursued, and that with so much resolution, that the Dutch are calculated to have destroyed upwards of 50,000 in no very long course of years. Retiring before their ruthless pursuers, they next took refuge along the line of and we believe that the enterprising and pioneering spirit of our Arctic voyagers has induced many whaling captains to follow their footsteps, with ample remuneration for their pains. Looking, then, upon these expeditions in the light of mere money-making concerns, surely it is worth being at some charge, as a stimulus to a branch of commerce which, in the gross value of articles imported from the Arctic regions, "in five years, free of first cost, amounted to near three millions sterling,*" and which, in the article of oil alone, occasions an annual average importation to the amount of upwards of twenty-five thousand tons.

Again, we would ask these wary guardians of our financial honour, whether some little hazard and speculation is not, after all, worth consideration on other accounts. Was it so completely out of the question, that these exploring vessels might have opened new communications with tribes connected with an increased produce in the fur trade? Was it quite visionary to suppose, that, in regions hitherto untrodden by the foot of intelligence, mines and minerals might have been made our own, of countless value as sources of profit? We throw out these hints on legitimate foundations; for it will be remembered, that, in Captain Ross's expedition in 1818, a mountainous tract was pointed out by the natives, as abundant in an ore, or virgin metal, which, from the specimen exhibited, there was reason to suppose were, in part at least, composed of meteoric iron! If one new combination of a valuable metal, then, was thus placed within our grasp, why not other varieties of new and curious compounds? But, to discuss this argument to a tithe of its merited extent, would occupy a volume. Suffice it to say, (we give but one instance, where twenty present themselves,) that, had the Phœnicians and Romans chilled the spirit of

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perpetual ice, which was their habitation when Scoresby wrote his celebrated work. Here, as many as 1400 of them were killed in one year. At last, worn out by perpetual persecution, they have plunged into the regions of eternal ice, where the boldest whaler dares not to pursue them. The consequence is, that the Greenland fishery, which was formerly carried on in the sea between Greenland and Spitzbergen, is nearly abandoned, and the whole trade would soon have been at an end, if Ross had not penetrated in his first voyage through the mass of ice which renders the entrance to Baffin's Bay so hazardous, and opened to the whalers seas never before fished, and which the monsters of the deep are found to frequent in great numbers. The most northern parts of Baffin's Bay, together with Lancaster Sound, Regent's Inlet, &c., are now the great fishing stations; and all these regions have been discovered, or at least laid down with accuracy, by the recent navigators, who opened the route to less adventurous traders—shewed them that the seas abounded with whales—broke the icy barrier which had never been passed since the days of Baffin, and described the coasts and harbours so correctly as to deprive the voyage of the greater part of its perils. The mere pecuniary expense of the voyages of discovery has therefore already been paid many times, independent of the extension of geographical knowledge, and the great improvement of science.

* Scoresby, V. ii. 133.

enterprise in their days, as those our money-loving countrymen wish to do in these our days, on the ground of improvident expenditure, tin would never have been discovered, and the many arts and manufactures connected with it must have perished for lack of such knowledge.

Lastly, come we to those, who, as a receipt in full of all demands, give CUI BONO as the sum and substance of their objection. It is hopeless, we fear, to suggest to them the importance of minute, and apparently insignificant discoveries, however remotely connected with science; that in the pursuit of knowledge, no fact, however trifling, is either useless or insulated; that a passing hint even, may become valuable, like the unit in arithmetic, simply by taking its proper place. Why remind them of the great discoveries, for which we are indebted to mere accident? That from the fall of an apple to the ground, the attention of Newton was successfully directed to the motion of the planetary system; that the glance of a sunbeam through a glass globe of water, led to the solution of the previous mysterious problem of the formation of the rainbow, and the laws connected with the refrangibility and divisibility of light? ' Why tell them, that curious observations, more or less akin to these, depend upon accident, speculation, and enterprize? That in these expeditions new facts have been established, and others may still be verified, respecting magnetism; that the relative proportions of land and water, in an interesting part of the globe, have been in a great degree ascertained; that the set of currents in particular directions have been made known.

To all and each of these, and the host of others that might be advanced, the answer is one and the same, *cui bono?* and conclusive indeed it is to those who, either know not, or, knowing, heed not, the advantages of scientific discovery.

> "What's Hecuba to them, or they to Hecuba?"

It is in vain for those who, by patient and deep research, have fathomed the depths of science, and, speculating in sound philosophy, have learned how, more than the ignorant are aware of, man is nearly or remotely interested in the furtherance of such pursuits, to appeal to the many who pride themselves in not being "over curious in these unnecessary matters."

If an appeal is made in vain, with such arguments in our favour, how, indeed, can we hope to obtain a hearing? when, casting aside all other reasonings, we would rest our approval of these and similar expeditions on the sole and simple grounds of their utility, in exciting a spirit of enterprise, of which, till these degenerate days, England was justly proud.

But, although our country's glory may be on the wane, still, we trust and believe there are some, (and we would gladly hope not a few they be,) who, on this ground alone, would patronise and uphold them. Men with British feeling, who would rue the hour when the flag of any other nation was hoisted on any hitherto unknown or inaccessible point or pinnacle of the wide world, where, had it not been checked and discouraged, the red cross of England might have waved triumphant, and borne testimony to the gallantry and perseverance of those who were her standard-bearers.

In language more eloquent and forcible than we can pretend to, sanctioned by the practical experience of a professional advocate in the cause of national discoveries, we shall close our remarks with the words of Sir Edward Parry:—"May it still fall to England's lot to accomplish undertakings like these, and may she ever continue to take the lead in enterprises intended to contribute to the advancement of science, and to promote, with her own, the welfare of mankind at large! Such enterprises, so disinterested as well as useful in their object, do honour to the country which undertakes them. Even when they fail, they cannot but excite the admiration and respect of every liberal and cultivated mind; and the page of future history will undoubtedly record them, as every way worthy of a powerful, virtuous, and enlightened nation."

E. S. Y.

We have copied the following from the Times:

The Isabella, of Hull, in which Captain Ross made his first voyage to the Arctic regions, and in which, by a singular coincidence, he has returned from what may be presumed will be his last, was launched at Hull in the year 1812, and named after the daughter of one of the owners, the late W. Moxon, Esq., for whom and J. White, Esq., of Cottingham, the vessel was built. She was then engaged in the transport service, and was at the taking of St. Sebastian with the troops, when several of the crew were killed. After the war, she was selected by the Government for the Polar expedition, and fitted up with double decks and other requisites to encounter the violence of the northern seas. After the return of that expedition she was paid off, and the vessel was then sold to the present owners, who have taken advantage of the capabilities secured by Government to engage in the whale fishery, in which she has been extremely fortunate, her strength and other advantages having enabled the captains to go further into the ice than other ships could venture. It was thus that Captain Ross enjoyed the singular gratification, at the time of obtaining a providential rescue from his hazardous situation, to find himself rescued by the very vessel in which he had first gone forth on his great adventure.—For a drawing and description of the manner in which this vessel was fitted for Captain Ross, see Nautical Magazine, No. 14.

Occasioned by the Restoration of CAPTAIN ROSS, *and his brave Followers, to their Native Country, in October last, after an absence of more than four years in the frozen regions of Prince Regent's Inlet.*

BY SIBELLA ELIZABETH HATFIELD.

A thousand harps with songs of joy,
Have rung for warrior bands return'd
Safe from the conflict's dread employ,
And crown'd with laurels nobly earn'd.

Ten thousand thousand eyes have beam'd
  Their welcome to their native land;
And a whole nation's heart hath seem'd
  With generous rapture to expand.

If thus are hail'd the sons of war,
  Restored from battle's crimson field,
Surely emotions holier far,
  Thy glad return, Brave Ross, shall yield.

For thou and thy brave sailor band,
  Guiltless of war, have won a fame
Lofty as victor can command,
  Who in the fiercest field o'ercame.

Seas unexplored, and desert coast
  Untracked but by the car of storms,
Beheld stern danger's countless host
  Assail thee in their darkest forms.

The frozen gulf, the icy height,
  Twin giants of the polar main!
Array'd in vain their fearful might
  Against thee and thy famish'd train.

Arm'd with a fortitude sublime,
  And trusting in the Eternal's shield,
Ye braved the terrors of the clime,
  When valour's self might blameless yield.

And who that knows the pining pain
  Of silent watchings day by day,
Tidings of loved ones to obtain,
  In unknown perils far away;

Hanging o'er hope's decaying lamp,
  To shield it from the sweeping blast
Of chill despair, whose vapours damp,
  Dark gathering, threat to quench at last;

Who, that hath felt, or only dreamed,
  Of life-consuming woe like this,
But with uplifted eyes, that beam'd
  Deep sympathy with hearts in bliss,

Hath heard the songs of rapture pour'd
  By sweet affection's gentle voice;
And with them, mingled thoughts that soar'd
  Where angels round their God rejoice?

Glad thoughts of fervent gratitude,
  To Him who fills creation's throne,
And through affliction's darkest cloud,
  Shews Love's bright sceptre still his own.

Forget we now the lofty glance,
   Which star-eyed science casts around,
Beholding in prophetic trance,
   Her sway o'er polar depths profound.

Forget we all gay fancy's thought
   Of British fleets o'er polar seas,
Urging their course with treasures fraught
   For Boothia's spreading colonies:

All, all, but that most noble boast,
   So well by manly daring earn'd;
All but the thoughts of Ross, long lost,
   And Ross TO ENGLAND SAFE RETURNED!

II.—ON THE CENTRE OF ROTATION. *By Commander John Pearse, R.N.*

[Concluded from page 643.]

FIGURE 1, in the accompanying drawing, represents correctly, on a reduced scale of three inches to a foot, a section of a model weighing $444\frac{1}{2}$ ounces. *a b n* exhibits the model floating in a horizontal position, and *l o* the water-line in that state: *d h i* represents it at an inclination of ninety degrees, produced by a weight, *w*, of forty-eight ounces, applied to the mast at *k*, when *p r* became the water-line; and the model in this state was similar to that of a ship on its beam-ends. The centre of gravity of the model was at *c* before, and at *g* after the inclination, and in the same horizontal plane as the metacentre *m*, and consequently the whole moment of stability was brought into action. Knowing the situation of the centre of gravity of the model correctly, which is found by suspension, and consequently the exact distance of this point from *k*, where the inclining weight was applied, the situation of the metacentre *m* is easily found, as it is always in the same vertical as that which establishes the equality of the two moments, or relative forces; namely, the *weight of the model* multiplied by *the distance g m, equalling* the *inclining weight* multiplied by *the distance k m.* Consequently, there is *only one point* where the *whole distance, k g*, can be divided so as to establish a *perfect equality* between these *two relative forces.* It is here clearly demonstrated, that the metacentre *m* descended *only* in consequence of the *greater immersion* of the model, and which proceeded from the *addition* of the *inclining weight*, and was *only equal* to the *distance* between the *water-lines* before and after the inclination: whereas the centre of gravity of the model ascended the distance *c m*, *minus only* the *distance* between the *two water-lines.* This clearly demonstrates the metacentre *m* to be the stationary point; and as there can be *but one*, consistently with the laws of mechanics, in a body which revolves or vibrates, it is, consequently, the axis of rotation also. And, hence, it is clear that the centre of gravity rises, describes an arch in doing so, and, that a ship is governed by the same laws in making its vibrations as other mechanical bodies: and it is here clearly proved again, that the same vertical which determines the situation of the metacentre, or point of stability, fixes that also of the centre of gravity of a new system, and of the axis of rotation as well, and which are evidently all one and the same. And the centre of gravity of the model being differently placed, would cause no alteration with respect to the situation of the axis of rotation, or of the metacentre *m;* the only difference that could arise from it is, that, with the centre of gravity nearer the metacentre, a less inclining power would be required to produce the same inclination, and consequently a less increase of immersion would proceed from it. On the contrary, with a greater distance between the centre of gravity and the metacentre, an increase of inclining power would be required, and this would produce a proportionally deeper immersion. A less power applied at a greater distance than *k* from the metacentre *m*, would also produce the same inclination; therefore a less increase of immersion, and consequently a diminution in the distance of the descent of the metacentre *m*, and increase in the ascent of the centre of gravity *g*. Hence, it is evident that the descent of the metacentre is entirely produced by the greater immersion which proceeds from the addition of the inclining weight. This experiment proves what (as has been before related) would be the results of an experiment on a circular body; for, however floating bodies may differ in form, their motions are still governed by the same physical and mechanical laws.

It is necessary here to repeat the opinion of M. Bouguer, " that the displacement is the same before and after the inclination of the ship; but that it would be increased or diminished if the ship turned on any other point than its centre of gravity." And that of Chapman's, also, who tells us " the ship would rise and fall, to preserve the proper displacement, if its centre of gravity was below the plane of the load water-line; but that this would not happen if the centre of gravity of the ship is raised to the plane of the load-line." These opinions are both equally erroneous, and there can be no doubt, as before observed, that the complexity of the theory, and not having considered the subject in a sufficiently practical shape, has led their authors into the error of confounding the centre of gravity of the ship with the centre of gravity of a new system, and, consequently, with the axis of rotation also; and it will be presently seen, by simple geometrical construction, that the only point about which a ship can vibrate, and preserve the proper displacement, without rising or falling as it inclines, is in or very near the metacentre.

Figures 2 and 3 exhibit sections of the same model as that represented by figure 1. *k l n* in each figure represents the model in a horizontal position, and *h i o* when inclined 20° 30′. The situation of the centre of gravity of the model being known correctly, that of the metacentre also is easily and correctly found by the method of P. Hoste, and as represented by figure 4. For, by this ingenious method, when the situation of the centre of gravity is correctly known, that of the metacentre, also, as well as the moment of stability of the ship, may be exactly ascertained. The weight of the model in this experiment was 446 ounces, being an increase of one ounce and a half more than its weight in the experiment represented by figure 1, and in consequence of the addition of a projecting rod to which the weight *w*, of forty-eight ounces, was suspended; and which produced the inclination represented, of 20° 30′, and, agreeable to the rules before described, fixed the point *m* as the situation of the metacentre. The place of the metacentre in figures 2 and 3 is therefore determined by this experiment, and the figures represented at the same inclination as that of the model in the experiment for finding the situation of the metacentre.

In figure 2 the model is represented as turning on its centre of gravity *g*; and it will be clearly seen, that if this point remained, after the inclination, at the same distance below the water-line *w r* which it was before, then the displacement would be increased by the amount of the surface *a b c d*, multiplied by the length of the model; and this increase would arise as a physical consequence, and in addition to that which would proceed from the vertical effort of an inclining weight or power. Such an increase is, however, impossible, and this argument has only been produced to shew the errors which theory alone has led authors into: for it is most evident that Bouguer's opinion, as regards this point, is entirely erroneous. In figure 3 the model is represented as turning on the metacentre *m*, by which the proper displacement is preserved without the necessity of any rise or fall of the body. And this proves the opinion of Chapman, as well as Bouguer's, to be erroneous; for it is most evident that, supposing the centre of gravity to be the axis of rotation, raising it to the plane of the load-line would only diminish the extent of the rise and fall, as there is no point below *m* about which the model could turn, and preserve the proper displacement, without rising and falling, the extent of which would be in proportion to the distance of the centre of gravity below the metacentre *m*. Bouguer's opinion, that the displacement is the same before and after the inclination of the ship, is also erroneous; and it has been before clearly demonstrated, that, when a ship is inclined by the force of the wind, a vertical effort is produced, which increases the immersion, and consequently the displacement, in proportion to the amount of the absolute inclining power, and the greatness of the inclination.

Figures 5 and 6 exhibit sections of a model differing in form, size, and weight; and of which the situation of the metacentre was determined by experiment, as represented in figure 7; and which is similar to that in figure 4. The results in this case are precisely the same as those given in figures 2 and 3, and clearly demonstrate that the only point about which a ship can turn, and preserve the proper amount of displacement, without rising or falling as it inclines, is in or very near the metacentre. And it is impossible that the centre of gravity of a ship can be situated in this point, for, in such a case the body would neither possess stability nor the property of vibrating, and a ship would be entirely different from all other mechanical and vibrating bodies. The most eminent authors, also, tell us that the centre of gravity of the ship must necessarily be situated below the metacentre. And we know, from practical experience, that the lower the weights are placed, or the lower the centre of gravity is situated, the greater is the moment of stability; and we also know, that in many of our ships the centre of gravity is situated upwards of six feet below the metacentre, or point of stability.

There can be no error in these experiments, with respect to the centre of gravity of the model, or that of the metacentre; the first being easily, and to the greatest nicety, found by suspension, and the latter ascertained by the experiments already described; and, in fact, the situation of the metacentre, and the point about which a ship can turn, without rising or falling as it inclines, is determined and governed by the same principles, and by the same laws, namely: The breadth of the ship, the form of the part immersed, and the action of the water on it.

The arguments of Bouguer and Chapman tend to prove that there is a point about which a ship can vibrate, and preserve the proper displacement, without rising or falling as it inclines. It has been clearly demonstrated, that this point is in or very near the metacentre. It has been proved, also, that this point becomes the centre of gravity of a new system. And it is very evident that this point, and, consequently, the axis of rotation, has been confounded with the centre of gravity of the ship by those authors.

Figures 2 and 5 exhibit a good representation of a floating body, forming the pendulum *renversé* of M. Bouguer, of which he considers the centre of gravity g to be the point of suspension, and the distance $g\,m$ its length; and it is this error which makes the theory with respect to this question so entirely erroneous. But, by simply reversing the order of M. Bouguer, and considering a ship as a common pendulum, and the metacentre m the point of suspension, the theory on this important point is rendered perfectly correct.

It is therefore evident, that, in consequence of this error, the lateral effort of the water, or resistance to lee-way, and the efforts which proceed from shocks of the sea, produce effects wholly at

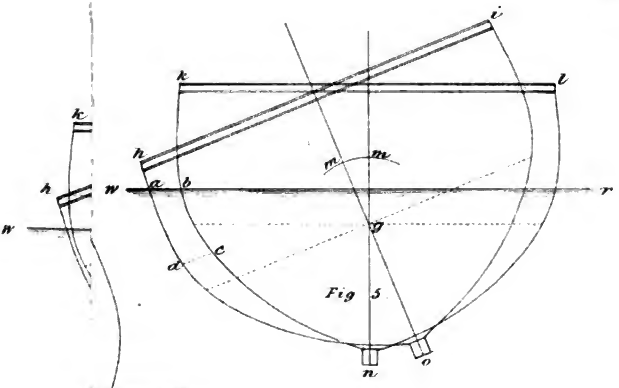

Fig 5.

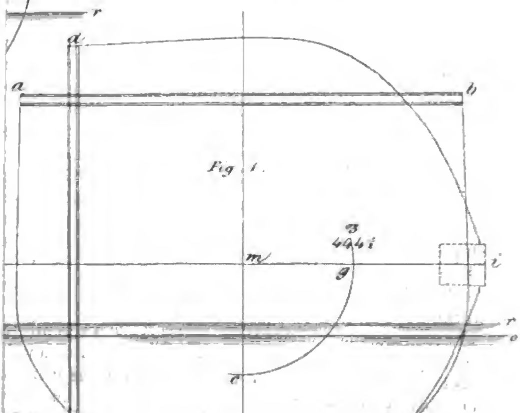

Fig 1.

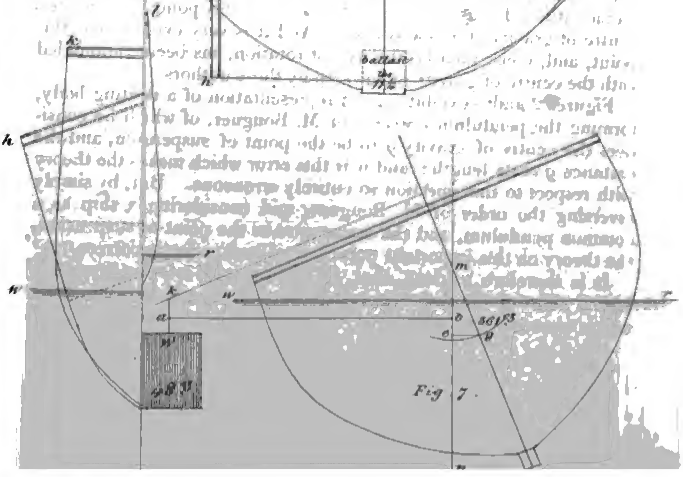

Fig 7.

variance with what is generally supposed. And when we consider that the moments or relative forces of all the powers or efforts which are constantly and variously applied, are estimated by the distances of their respective centres of effort from the axis of rotation, it will appear evident that the present imperfect system of masting proceeds from erroneously considering the centre of gravity of the ship to be the axis of rotation, and that the correction of an error in so important a point must lead to a clearer understanding of the theory, and be of the greatest advantage to the science of naval architecture, practically as well as theoretically.

It has been stated, that when a ship inclines its centre of gravity rises, and describes an arch in doing so; still it may not always be a perfect arch of a circle. It is the effort of the water on the part immersed which determines the situation of the metacentre, and the situation of this point in a circular body never alters. But, as the form of a ship differs very materially from that of a circular body, as the form of the part immersed is not always the same at different inclinations, and as it is the effort of the water on this part that determines the place of the metacentre, its situation may vary a little at different inclinations; and, consequently, the arch described by the centre of gravity in rising may not be a perfect arch of a circle. Still, the distance of the centre of gravity of the ship from the metacentre being the radius of the arch, the different distances of the two points, when the situation of the metacentre alters, will be the radiuses of their respective parts of it. But it is only a great inclination that can ever produce a material alteration, and, when it tends to diminish the stability, proceeds from bad formation.

Plymouth, Sept. 3, 1833.

III.—ENGINES IN STEAM-VESSELS.

To the Editor of the Nautical Magazine.

SIR—In reply to Mr. Gill's observations on my last letter, I beg to thank him for the account of the state in which the Meteor's boilers were found; it is the strongest proof I ever knew of the correctness of one of my assertions. If he will look at the &c. placed after the "top of the flues," he will probably believe that my intention was to include the sides of the flues, and bottom of the boilers, as liable to the deposition of salt; meaning by that word the deposit from sea-water usually found in steam-boats' boilers. I agree with him, that, blowing off with 4 lbs. steam in square boilers will not entirely clear the deposit. My assertion was, rather, that 10 lbs. or 15 lbs. steam would effect it in those of a circular form. The square boilers of the Herald, I believe, afford a fair supply of steam. Was a sufficient supply obtained from those belonging to the Meteor? From the state in which they were found, it would rather appear that no waste of hot-water could be spared for blowing off; otherwise the deposit could scarcely have accumulated to such an extent as to cause the destruction of the boilers. I am quite ready to give up the deposit on the flat top of the flues; though I have heard of cases in which they were *salted:* the sides are sufficient for my argument. The assertion relative to circular boilers must be proved or disproved by a reference to the Echo or Cornubia. With regard to the expression of "beating off a lee-shore with 40 or 50 lbs. steam;" I scarcely think that a sarcasm on the weakness of square boilers deserved much time or trouble to refute. My opinion had been previously decidedly expressed by the term of *middle steam*, or that between 10 and 30 lbs. I am ready, however, to meet the question, "by looking to the modus operandi;" since I include the vacuum, when representing the common law of elastic fluids in figures, and Mr. Gill divides only to the pressure per square inch above atmosphere, at different points of the cylinder, when steam is used expansively. The difficult questions of density, quantity of heat in 50 lbs. steam, are best avoided.

Lbs. per square inch above atmosphere. Vacuum.

$$\left.\begin{array}{rcrcr} 50 & + & 13 & = & 63 \\ 40 & + & 13 & = & 53 \end{array}\right\} \div 3 \left\{\begin{array}{l} = 21 \text{ lbs.} \\ = 17\frac{2}{3} \end{array}\right.$$

$$\begin{array}{rcl} 4 & + & 13. \qquad 17 \end{array} \quad \left.\right\} \text{Steam at the end of the stroke before entering the condenser.}$$

This view of the subject of steam used two-thirds expansively is totally different; and, if correct, not quite so visionary; and most of Mr. Gill's argument falls to the ground, if equal condensers would act with 40 lbs. steam used two-thirds expansively, as with 4 lbs. not expanded.

The cylinders of Messrs. Bolton and Watts would be strong enough for the steam I should prefer using, provided the flat cylinder-covers were altered so as to form a small inverted arch. Let the case be fairly stated, whether shaking the vessel to pieces, with the chance of being drowned in deep water, or endeavouring to get safe on shore is the best plan to adopt. It is all a matter of taste; but mine I consider the most seamanlike plan.

The expansion of steam was, I believe, the subject of one of James Watts' patents; or, at least, strong statements of its advantages were held out to the public, but never realized by him. The competition of the Cornish engineers, and their practical skill, have made it available in Bolton and Watt's engines, in their simplest form; their immediate object being to exceed the duty performed by Woolf's engines. The latter for many years kept the lead, and first performed fifty millions duty in the monthly report; an object of the same ambition some years since, that the performance for a month's duty of one hundred millions is at present. Borlase's engine, I may, perhaps, be allowed to add, now claims the performance of one hundred millions in twenty-four hours, since the date of my last letter, but previous to its publication. The expressions, "Expansive business," and "Cornish friends," remind me of those used so long by all classes that they pass for valid. "What do they know of steam in Cornwall," was long since asked; to which may be answered, "Perhaps the *up-country engineers* find coal cheap in their country." And, in reference to his Majesty's steamers, it may be asked, Can they say the same? The circular boilers are sometimes called Trevithick's boilers, and were introduced by him. Their principle is similar to that which he proposed and executed for the steam tug on the Merthyr railroad, the first working locomotive engine in England.

The number of strokes per minute, strength of steam, &c. is Mr. Chatfield's proposal, who inserted in the *Nautical Magazine* a steam-log of the Rhadamanthus. I most strongly urge its adoption, with the addition of a duty-report. That duty to be calculated from the work performed by the engine in moving the paddles; leaving open the dimensions of the engine for improvement by competition. I am aware of the difficulty of this subject, and freely own that I failed to please myself in an attempt to draw up for the *Nautical Magazine* a fair mode of comparison between steamers, on principles similar to the mining steam-engines' duty.

Experiments are, perhaps, required. I believe some of the first engineers of the kingdom have shirked the question, How many square feet of paddles driven through a given space of water, with a given velocity in one minute, are equivalent to a horse-power? Bolton and Watt assumed 33,000 lbs. lifted one foot high per minute, to be a horse-power. In pumping water, this may be a fair mode, but soon changed in this county to the present form. Here the engineers, confident of their engines, appealed to the fairest mode of comparison that could be then devised, to obtain the one-third saving of the coal of their engines, as compared with Newcomen's. Injurious suspicions have been entertained in this country of engineers who have avoided the above question; from which I have defended them, in the firm belief that they were merely unwilling to avow their ignorance on this point. Nor will they be easily forced to adopt it, unless some patentee of an engine shall be found with nerve, capital, or interest sufficient to demand a fair means of comparison.

	Bush.		Minutes.
In the Rhadamanthus each engine is said to be 110 horse-power, and burns 12½ bushels per hour, or	1	in	4·888
Borlase's engine burns, with a duty of 91,212,000, working at six strokes per minute	1	in	25
Its horse-power is likewise calculated from *work performed*, 110½.			

Since the Load in Shaft is . . . 76,010 lbs. = 34 tons — 40 lbs.
Number of ft. lifted in the Pump 8 ft.

Dec. 1832, duty 91,353,246 | 608,080
6 No. of strokes per minute.

33,000 ÷ 3,648,480 = 110½ horse-power.

The merchants who supply Wheal Vor with coal have yards on the mine, and the daily consumption of each engine (nearly twenty, of different sizes) is delivered from them, so that the merchants' accounts are a most complete surety for the exact quantity consumed by each engine. The engine-men take care that they get fair measure. A duty-report in steamers would soon teach engineers to be extremely careful in the quantity and quality of coal delivered by contractors. I will here correct two errors in my July letter.

	Job's Engine.	Druce's Engine.
Load on Piston in lbs. per square inch,	9·28 lbs.	11·11 lbs.
Stroke of Pumps in Shaft	7·5 ft.	8 ft.

Load in shaft in lbs. as stated on piston by mistake, in consequence of the omission of the above; and, likewise, the improper wording of the next sentence, in which it rather appears that the rest precedes the return stroke. It was a mere guess, and is stated as each time was reckoned. The following is from positive observation at a time when both engines were working rather less than five strokes per minute:

	Borlase's Engine.		Davey's Engine, 80 inch cylinder.	
Acting-stroke . . .	3	. . . .	3⅓	In doors, } Stroke.
Return ditto . . .	5	. . . .	5	Out doors, } Stroke.
Rest	6⅔	. . . .	4⅔	

Davey's engine is new, and has been reported but once at eighty millions duty, working eight and a half strokes per minute, at the average. This number was reduced as soon as another 85-inch cylinder engine was put up alongside of it. There are five engines working on this mine (the Consolidated Mines) larger than this engine, so much boasted of in the papers at the Town Colliery.

Would not the discipline of his Majesty's service in steam-boats be improved by making the engineers warrant officers? If I am not in error, they serve only in a civil capacity. It would be in their power to give up the charge of the engine under similar circumstances as those in which masters decline further charge of the ship. I do not approve of two commanders in the same vessel; and no royal road can be made for the acquirement of steam knowledge. The path might be easily smoothed. Few persons can deprecate more than I do the absurd jealousies of engineers, and in some instances their aversion to the trial of new plans. In this county, Barton's pistons are said to have met with unfair treatment. He is totally unconnected with steam-engines, except as the owner of the four walls round two or three engines.

My object is to bring into fair discussion the merits of the Cornish engineers, and whether their plans are, or are not, applicable to steamers. I believe that an allowance of coal double that of good Cornish engines will eventually be found nearly sufficient for steam-boats.

The Meteor's boilers, built by Bolton and Watt, are, I suppose, of the common form. Would it not have been more conclusive against my assertion of economy of space and fuel, to have proved that her boilers occupied less space than those of the Cornubia, and afforded a sufficient supply of steam.

My assertion in regard to the Echo was, a statement of my opinion of the advantage possessed by circular boilers and expansive steam, in allowing the power of the engine to be varied at pleasure: and arguments directed against the economy of power, even if correct, might be considered inconclusive. Mr. Gill's assertion of the small depth of water, four inches, on the tubes, is not supported by any thing in my letters. I advocate no plan that does not provide for a depth of water equal to that used, on to the top of the square flues; and I understand this is the opinion of other advocates of circular boilers.

You will oblige me by inserting the following correction of an important mistake in my first letter.

Steam at the end of each one-third part of the cylinder.	1,	63	·53
	2,	31½	·26½
	3,	23⅝	·18⅝

lbs. steam.				lbs.	
50			63 expanded ⅜	23⅝	Steam when it enters the condenser.
40	+	13	53 expanded ⅜	18⅝	
4·			17 not expanded	17	

Minutes.
Error.—4,888 recurring decimal time of the consumption of one bushel of coal in Rhadamanthus, ought to be 4,8 minutes only.

The error, in regard to computing the strength of steam used expansively, is common, and arises from the usual mode of speaking of steam as so many pounds above atmosphere, or the load on the safety-valve; but it leads to many erroneous opinions. My first letter proves I was guilty of the same mistake: it was corrected in the figures expressing expansive steam in the letter published in September.

The sentence ought to have been written thus: "The supply of steam is cut off in many engines at from one-fourth to one-fifth part of the stroke of the piston, the remainder of which is effected by expansion; so that when thirty pounds above atmosphere is used, the piston is brought up easily. With steam exerting a pressure of about eight or ten pounds, or from four to six pounds below atmosphere, having the advantage of starting with thirty pounds steam, or forty-four effective pressure, miner's friction, in the steam-pipes, &c., 'to overcome the inertia,'" &c.

Enys, *Oct.* 6, 1833. JOHN S. ENYS.

IV.—SUPERSTITIONS OF THE SHETLAND ISLANDERS.

Extract of a Letter from an Officer.

THE hurricane you mention (that of the last days of August) was probably felt more here than farther to the southward, but with less loss of lives or property; and for this reason:—as the poor fishermen are from their infancy in the habit of being exposed in open boats, at a distance of thirty or forty miles from the land, they become very good judges of the weather, and, generally speaking, make for the land, and get their boats into safety, previous to a gale of wind commencing. Consequently none of the fishing-boats are lost in this neighbourhood. With strangers, it is quite the reverse, as they endeavour to carry sail, and clear the islands to windward, instead of bearing down for them, when almost every visible opening welcomes them into safety.

The foregoing remark was fully demonstrated during the late gales. A ship from Archangel (the Wellington of Newcastle) was caught in the late hurricane to the westward of these islands, and, not being able to carry sail to weather them, bore up, and ran down towards the islands, into St. Magnus Bay. The weather was so thick that the land was not discernible a mile distant; the ship passed close to the dangerous reef of the Ve Skerries, and proceeded on till she saw the land on both sides, and a reef ahead. There she let go her anchor, and was immediately removed into an adjoining creek in perfect safety, from whence she sailed four days ago. While another ship in ballast, endeavouring to keep the sea, was wrecked on the island of Foula, and a boy was the only one saved of her crew. Perhaps it would not be amiss to give you some account of this latter vessel, as related to me by the boy saved from her. She was about twenty miles to the westward of Foul Island when she encountered the hurricane, which laid her on her beam-ends; and, to right her, the masts were cut away. But, by some mismanagement, her mainmast fell on her rudder-head, and rendered her rudder useless. She was then drifted by the violence of the gale on the west side of Foul Island, where the cliffs are about 600 feet in height, and hitherto considered inaccessible by the natives. There she was exposed to the whole fury of the sea, and almost instantaneously was dashed to atoms. By the violence with which she struck the rocks, the boy was precipitated from her forecastle to a small spot about thirty feet above high-water mark, where he lay for some time in a state of insensibility. On recovering himself, (as self-preservation is the first law of nature,) he attempted to ascend the cliff, and, having scrambled about halfway up, he found that it projected over his head. Thus disappointed, he was forced to descend, at the imminent peril of his life, and seek another way up. After toiling for some time among the rocks, the poor lad gained the summit of the cliff, with his hands and knees lacerated, and his whole frame bruised from the violent blows he had received. It is a general practice among these islanders, and more particularly among those of Foul Island, (all of whom are very superstitious,) to go to the cliffs in bad weather; and some of the natives of Foul Island happened to go to the very place where the young lad was ascending, just as he had gained the summit. Terrified at his appearance, instead of rendering him any assistance, they all took to their heels, and scampered off as fast as they could to their homes, leaving the poor fellow to shift for himself. One would have thought that they might have believed their senses; but no, the part of the cliff which the lad had surmounted had long been deemed inaccessible by mortal means, and he could be no other than some water-sprite that appeared before them, by the gray light which served to make his appearance even more mysterious. Dr. M'Cullock, in his account of the Hebrides, alludes to the superstitions of the Shetlanders respecting mermaids and water-spirits, and as the foregoing is a proof that this belief prevails among them even in the present day, I have transcribed the passage for your amusement.

That the water-spirit may be traced to a Norwegian fountain, and thus to the German goblins of the same character, is confirmed by the existence of the same belief in the Isle of Man, and in Shetland, in former times. In each, also, he appears with a difference. In the former island, he used to feed among the cattle in the fields; plunging into the water when pursued, like the hippopotamus. He was so like to the ordinary cattle, as to deceive both the people and the cows: but when these were with calf by him, the consequence was fatal to the cow, and the produce was a shapeless mass. This was also the case in Angus. King Mihrage's mares had better fortune; and the sea-horse of that tale, also, offers one of those coincidences between northern and oriental fictions which meet us at every step. In Shetland, he was an absolute German goblin, and a genuine river-horse, or water-king; a mischievous kelpie, who thirsted for human life, assisted the drowning to drown, and sucked their blood through their nostrils.

Even the witch of Shetland became a water-elf; for Marion Pardon was burnt in 1645, because she upset a fishing-boat under this form. But the water-spirit, with his ninefold, is of a somewhat troublesome pedigree and connexions. The Dracæ of Gervase of Tilbury, who float on the waters in the shape of cups and rings, to inveigle travellers, are of his race. He has high relations in the north, where he maintains his character as the devourer of damsels and drowning men. He is no less than Odin himself, under one of his metamorphoses; for, like the gods of India, or the triple Queen of Night and Addled Brains, this god has in his time played many parts. He here enacts Old Nick, and Old Nick is originally a water-devil; he is Davy Jones himself; a personage unknown to the Greek mythology, unless he is Neptune, as the Nixies and Undines, his nieces, are the sea nymphs; a metamorphosis not much less reasonable than that into St. Nicholas, the patron of seamen, formerly noticed. Whatever that be, he haunts the wave and the flood, the mountain torrent and the ford, the black lake and the raging sea; raging the storm and the inundation, and scorning to add fraud to force. The witch, who threads the yeasty wave in her cockle-shell, and she who pursues the sailor's bark to Aleppo, are of the same pitiless school. But the Nixies charm, to betray. They display their beauties and allurements on the bright margin of the summer stream, and plunge the confiding lover beneath its waters; for their voices are sweet as the melodious droppings of the waters in the caverns of the sea; and in the caverns of the sea they also abide, sporting in the green wave, and swallowing up the unwary boat that ventures into their enticing watery bowers. The Lowland Kelpie is, unquestionably, of these; but of which he and Nikar himself only know.

There is a much more intimate connexion between the mermaid and the other spirits of the flood, than the vulgar are aware of. This is another of the instances where a superstitious belief degenerates into an imaginary physical fact. Hence, the Highlanders believe now in the mermaid as a sober question of natural history; as a beast that may be stuffed and dried, and shewn to holiday-fools of England for a shilling. It is far otherwise in Shetland; but there is indeed a general fishiness in the superstitions of these islands, which smells rank of their Norwegian descent. With similar claims, the Highlanders have lost sight of many of the dreams of their Runic ancestry. The same belief was preserved in the Isle of Man, as long as the Manx chose to believe any thing. The anatomy of their mermaid was that which all the world knows, even to the comb. Of fifty stories, there is not one more to the purpose than this. A beautiful sea-nymph became enamoured of a young shepherd, bringing him splendid presents of coral, shells, and pearls; accompanying them by caresses and smiles. On one occasion, however, attempting to embrace him, he became alarmed, and resisted; which, the lady resenting, threw a stone at him, whereof he died.

The mermaid is multifarious. Peter Gellius says, that the Tritons of Epirus lay in wait for women, whom they stole. The sea-nymphs and giants of the north prophesied, like the sirens, and sung warnings. The mermaid of Resenius preached a sermon against drunkenness. The Lady Mur Gyga of the Speculum Regale is known to all the adepts. The Coryvrechan was her sister. The Nereides and the Sirens, Proteus, and his crew, all betray their own birth. Hesiod says that they lived two or three hundred thousand years. Demetrius considers the gods of the western islands, who died in hurricanes, and on whom Plutarch is so philosophical, as mermaids: more confusion. This personage says that they conferred the gift of prophecy. This is the very Arabian story. Pliny is full on this subject, and says that they came on board of ships in the night, which sank under them. Molos, who made too free with one of them, was found without his head. But they took care of their own heads. For, in the Danish ballad of Lady Grimild, Hero Hogen cuts off the mermaid's head, and she puts it on again. There were mermen of course. Rosmer Hafmand, in the Kœmpe Viser, is one of these.

The Shetlanders, philosophers in the matter of drowning, have provided an expedient for the amphibious powers of the mermaid tribe, or, perhaps, have retained some original belief. There is an aerial world beneath the waters, and it is in this they abide, passing the liquid element by means of inflated seal-skins. On one occasion, a nymph who had lost her jacket was taken by a native and married; producing a large family. Still she longed for the sea; and, after many years, picking up the diving-machine of one of the tribe, she plunged into the surge, and was seen no more. In the Isle of Man, as in Shetland, it was the belief that there was a world beneath the waters, with another atmosphere; abounding in all the imaginary treasures of the deep. Fabulists, scarcely less ingenious than Sindbad, even pretended to have visited it; describing, like Clarence, "wedges of gold, great anchors, heaps of pearl," unvalued jewels, scattered over the bottom of this fairy sea. There is Orientalism in this also; it is the watery empire of the Arabian Tales again modified by the peculiar habits and opinions of this northern people.

With regard to my old ship, neither wind nor weather shall destroy her, unless I go with her. Sufficient warning was given me by the barometer twenty-four hours previous to the commencement of the hurricane; and I experience weekly some hard gales, and some sudden squalls from the hills every day. By a sudden rise of the Mercury, betweeen midnight on the 25th of August and 8 A.M. on the 26th, and before noon on the latter day, a fall of one inch and a quarter told me that something worse was at hand, than what we had already experienced, and preparations were made accordingly to encounter the enemy. We were lying at anchor under a peninsula, about 300 feet in height, to the westward of us, and landlocked in every part except from south to S.S.W. The two bowers were down, with sixty feet of chain on each; the sheet anchor ready, and a fourth anchor if necessary; and the old ship put in condition either to ride out the gale or founder at her anchors. At midnight, on the 26th, the rain poured down in torrents, and the wind began to freshen from W. b. N., from which quarter no harm could happen to us. About 2 A.M. on the 27th, the sea had rose to an extraordinary height, sending such a swell round the little headland which sheltered us, that occasioned some difficulty to keep on our legs on board, as it took us right abeam; while the spoondrift over a narrow isthmus was washing over the bows, and bidding defiance to any person who would shew his face on deck. At daylight on the 27th, the scene was awfully grand. Cliffs elevated from 20 to 40 feet above the level of the sea, and on which we had been walking a few days previously, were now seen enveloped in yeasty foam, the breakers making a breach over them. Islands, sixty and seventy feet above the sea, such as Dore Holm, Sarla Holm, &c., were only discernible at intervals, and all rocks with less than eight fathoms water over them were breakers. To have walked on shore, unless under the lee of hills, or a man weighed at the least 200 cwt., would have been impossible. Our old craft was easy enough in the strife of elements; but there was a cutter near us that, to use the words of "the landsman," kicked, and rolled, and floundered about most villanously; having the property, as seamen call it, of making bad weather, as if it was not bad enough already. But this is a common trick with ladies and gentlemen on shore, as well as with cutters at sea; when, not content with catching the evil in the simplest way, as you do a stone, by turning your back on it and receiving it in a soft place, they rebel, and twist and turn, and flounder about, till it hits them in the worst of all possible places, with a vast increase of the consecutive grievance. The ills of life commonly require a helping hand to perfect them; and the general rule is, when the poker falls on the fender, always to knock down the shovel and tongs. "Gossip, by your leave, quoth Mother Bumby, I do well perceive the moral of your story."

The fishery of this season is ruined, and nearly all the crops; and I might almost add ourselves.

On the evening of the 27th, the violence of the hurricane had abated. At 4 A.M. on the 28th the weather was moderate, the wind having shifted round to the northward; but it is a remarkable fact, founded on the experience of the oldest islanders, that one day's fine weather here is about equivalent to fourteen in England; or, that, for fourteen fine days in England we have one

here. Of course, as this is not one of the few fine days, the rain is now pouring down in torrents.

During the whole of the hurricane we did not find it blow to the southward of S.W. b. W. and not farther to the northward than W. b. N.

V.—HISTORICAL SKETCH OF THE ROYAL NAVAL COLLEGE AT PORTSMOUTH, *from its first establishment to the present time.*

> "Be it a weakness, it deserves some praise,
> We love the play-place of our early days;
> The scene is touching, and the heart is stone
> That feels not at that sight.———" COWPER.

THE disadvantages, in point of education, under which the officers of his Majesty's Navy first go to sea, are well known; and, notwithstanding the various measures that have been taken to remedy them, a full and efficient cure for the evil is, we apprehend, still a desideratum. The very nature of his profession demands from the naval officer a compromise of those higher pursuits in the range of literature, which adorn the mind, and which to him would be particularly valuable, for the sake of preferment in the service of his country. So that, if, at the age of twelve or thirteen, he commences his career with his Latin grammar by heart, he may consider himself fortunate. All the rest he may pick up as he can, if a taste for such subjects, and frequenting the shores of those places treated on by the classic authors, are a sufficient inducement to him to do so. But he is no sooner embarked than matters of more immediate importance, connected with his profession, call for his attention; and, while he is acquiring the experience of the seaman, it is necessary that he should learn the art of the navigator. Thus, he becomes transferred at once from the precincts of the grammar school to the tuition of the schoolmaster on board his ship.

The earliest establishment of this class of officers in his Majesty's navy, we have not been able to ascertain; it is a matter of no great importance; but it is certain that they were in existence previous to 1729, for we find them alluded to in the first proposal relative to the institution of which we are about to treat. Whether they were calculated to execute the duties of their office with more efficiency at that time than those of the present day, we cannot say; but we should not be induced to form a very high opinion of them, from the terms in which they are alluded to in the first proposal to erect an academy in Portsmouth dockyard, and to appoint proper masters and ushers to it. The professed object of this institution was, "to qualify young gentlemen in a better manner for his Majesty's service," in consideration of the inconvenience attending the establishments of volunteers, "from the shortness of time allowed to qualify them for Lieutenants, and from the limited education they receive from the schoolmasters on ship-board, where they are only taught the theory of navigation." Such was the origin of the Royal Naval College, authorized by an order in council of his late Majesty George the Second, on the 21st of February, 1729.

It is interesting to contemplate the formation of a public establishment like the present, that took place more than a century ago, and to gather from their deeds the sentiments of the Board of Admiralty in the time of Lord Torrington. Our readers, therefore, will, perhaps, excuse us, if we are a little prolix in this early stage of our subject. We shall first premise, that the academy was to contain forty boys, the sons of noblemen or gentlemen; the age of their admission being from thirteen to sixteen. The duties of the academy were to be performed by the following masters, who, with the students, were to be appointed or dismissed at the pleasure of the Admiralty.

A Mathematical Master, who was to teach writing, arithmetic, drawing, navigation, gunnery, fortification, and other parts of mathematics, receiving a salary of	£200	0	0
Three Ushers, with salaries of	150	0	0
A French Master, with a salary of	80	0	0
A Fencing Master, to teach also the exercise of the firelock—his salary	50	0	0
The Master Attendant, salary	20	0	0
The Master Shipwright, salary	20	0	0
The Boatswain of the yard	10	0	0
The Surgeon of the yard	20	0	0
And for the Annual Supply of Mathematical Instruments, Maps, and Books, after the first stock being laid in, per year	10	0	0

Making a total expense of £560, annually. This, however, was increased, on the academy being opened in January, 1732, by a hundred per year being proposed as an allowance to the Commissioner of the yard, who was nominated by one of the regulations, Governor of the Institution. It was the duty of the mathematical master, whom we may call the head-master, to board, as well as to instruct the scholars, a suitable habitation being provided for him in the academy; and the other masters were to be under his direction, but no such provision was made for them.

One of the first regulations of this early institution was, that no boy should be admitted into it without a certificate from the master that he had made some proficiency in Latin; from which we may form an idea of the estimation in which the grand foundation of languages was then held. The studies of the first year to be passed in the academy were not to be interrupted, for we find that "the mathematical master was to certify the names of such scholars who had been a year in the academy to the commissioner, after which time they were to be excused from going to school two afternoons in the week. The commissioner was to direct the master attendant to carry them one afternoon to the rigging-house, and shew them the manner of preparing and fitting the rigging of ships; as also to the storehouses and sail-lofts; and likewise to the ships then afloat, where any works were doing fit for their knowledge; and even to employ them in such works fit for them." The commissioner was also to direct the master shipwright to instruct them on the other afternoon in the knowledge of the proportions and use of all the parts that compose a ship; and, with the view of combining these practical duties, he was to appoint any ship or vessel in ordinary, of the smallest size, to be placed as near to the dockyard as necessary, and to direct the scholars to rig and unrig her, frequently, under the inspection of the master attendant, or the boatswain of the yard, that they might qualify themselves for the duties of able seamen and midshipmen; besides which, she was to be provided with two guns, and ammunition, and the commissioner was to appoint one of the most experienced gunners of the ships in ordinary to instruct the scholars in their use. But these pursuits were only allowed to be followed by those who had been a year in the academy; nor were any of the scholars allowed to learn to fence, or the use of the "fire-lock," till they had completed the same time. A modification of these rules we perfectly remember being in force at the commencement of the present century.

A uniform was established at this time; for, among other regulations, it was required that each scholar should provide himself yearly with a new suit of blue clothes, "against his Majesty's birthday," conformable to a pattern suit lodged with the mathematical master. This, however, was to be done at his own expense, and it was probably not always worn, if he only had one new suit in the year. Church was to be regularly attended in the dockyard. The holidays allowed were three weeks at Christmas and Whitsuntide, besides the holidays of the yard; but it was particularly directed that he was to lose the time he exceeded the regular holidays at home, although he might have permission to do so; and having done so without permission, the third offence incurred a dismissal from the academy.

The period allowed for the scholar to remain at the academy was three years, and not less than two; after which he was required to serve four years more at sea, to qualify for Lieutenant. When the Admiralty thought fit, they might "draw out" any of the scholars to send to sea, on which occasion the commissioner was directed to "advise with the masters and officers of the yard" under whose instruction they had been, and to make a return of the names of such as he should find best qualified, with an account of their characters, and the progress they had made in their studies; and the vacancies thus produced were filled up by fresh candidates. On their embarkation, we find that the captains of the ships were required to keep them to the duties of seamen, (a tolerable specimen of the old school;) but being still officers, the order expressly directs that "they shall have the privilege of walking on the quarter-deck, and shall be allotted a proper place to lie in, without setting up cabins for them; and that they shall be rated on the ship's books under the title of 'volunteers by order,' and receive able seaman's pay." After having been two years at sea, they were "to be rated midshipmen ordinary," and to do the duty of midshipmen, but were only to receive the pay of able seamen. On their ships returning at any time to Portsmouth, they had the privilege of attending the academy, to continue their studies as before, if they chose, but without incurring any expense to his Majesty; but they were expected to take their logs to the mathematical master for his inspection, who was to report their improvement to the secretary of the Admiralty. In the event of their ships being paid off, they might be again received at the academy, by order of the Admiralty.

Such were the regulations for the management of the academy at Portsmouth on its first establishment in 1729; and it was shewn, that a saving to the country would be effected, of near £100 per year, after deducting the salary for the commissioner of the yard as governor. It was considered that the usual complement of volunteers for the navy, when 10,000 seamen were employed, was 87, the expense of which, including their pay, provisions, and table-money, amounted to £3162. As they were in future to be always rated as able seamen, until promoted, that expense was reduced to £2413, which, with the annual expenses of the academy as it was then established, still left a reduction of nearly £100 annually; and this saving would be greater in proportion as the navy was augmented, as the establishment of the academy would not be increased.

Thus fairly commenced, we find no further mention of the new academy until 1749, when, on the 15th of April in that year, the appointment of a Latin master, with a salary of £80, took place, which at once annihilated the saving; but still, allowing that the academy was always full, it would yet incur no expense to the country. It might have been supposed very naturally, that there would have been plenty of candidates for an establishment of this kind, with the advantage of an education, and the allowance of two years as sea-time; but even in its infancy, the present Royal Naval College was not destined to prosper. Such was the apathy of our "noblemen and gentlemen," for whose sons it was purposely erected, or probably such was the ardour of the youths for a sprinkling of salt-water, that they preferred the former method of picking up their knowledge with the tritons of Old Neptune; and the academy, for, forty years after its birth, although intended for forty scholars, could never boast of more than thirty-three at one time. Thus it languished on till the year 1773, when the number of scholars in it were reduced to fifteen, at which period its low condition attracted the attention of his late Majesty King George the Third, on the occasion of his visiting Portsmouth Dockyard. So great a falling off could not be accounted for; but the excellent and benevolent mind of George the Third determined on converting a portion of the establishment to the benefit of naval officers.

The 24th of September, 1773, was an important day in the history of the Royal Naval College, as well as in the annals of the Royal Navy, for it was then that the sons of naval officers were admitted into the academy free of all expense; an advantage of no trifling description, it is true, but one, if we are not mistaken, that has been productive of benefit to the country. At that time, Lord Sandwich presided at the Board of Admiralty; and, as there were then 20,000 seamen employed in His Majesty's fleet, notwithstanding the additional expense thus incurred, it still appeared that a saving of the public money was effected. The annual expenses of the academy had then amounted to £742, which, with the additional expense proposed, £450, would increase it to £1192. But the expenses of 147 volunteers, then necessary for the navy, were £5343; and the expense of the scholars to replace them, rated as able seamen, being £4077, would still leave a saving of £73 to the country. It was directed that 15 young gentlemen, the sons of commissioned officers of His Majesty's fleet, "should be entertained in the academy, as a part of the 40 scholars to be educated there, and that they should board with the master, like the other scholars, but free of expense. An allowance of £5 annually was to be made to them for clothing, all of which was included in the additional expense. It was also further directed, that they should be admitted into the academy at an age not under eleven, nor above thirteen years; that they should remain in the academy three years, or that they might continue there five years, unless they should have sooner gone through the plan of education, or their parents might wish them removed on the completion of three years, but that they were never to remain there beyond the age of seventeen. Three years of the time passed by them at the academy was allowed them as sea-time, thus giving them great advantages over their school-fellows. The rest of the regulations remained the same, but the salary of the mathematical master was reduced from £200 to £150, and one usher only allowed, at £100 per year, instead of £150, as before. The academy, as might be expected, was not so neglected then as it had been, in point of the number of candidates for admission.

The foregoing establishment continued unaltered till the year 1797, when it was considered that the instruction of drawing, writing, and arithmetic was too laborious to be performed by one person, and a drawing master was therefore added, with a salary of £100. In the year 1799, when Lord Spencer presided at the Admiralty, in consequence of the increase in the price of provisions throughout the country, the head master, Mr. Bayly, was allowed £30 a year, instead of £25, for a provision for each of the 15 sons of naval officers; and, in 1800, when Lord Gambier was the First Lord of the Admiralty, the salary of the fencing master was increased from £40 to £100; and his attendance, instead of twice, was required four times in the week. The only other change that took place about this time, was in 1802, when Lord St. Vincent presided at the Admiralty. In consequence of the tax on "placemen and pensioners," in that year, the reduction of Mr. Bayly's salary, by its operation, was so great, that, from £150 it was extended to £200 per year.

We are now arrived at a momentous period in the naval history of our country. At war with nearly all Europe, the British fleet amounted almost to 800 ships; and we find that the grant of seamen and marines, for the year 1806, was 120,000. In 1729, when the academy was built, the number of ships employed was 40, and the number of men 10,000. So large a fleet as was now in commission required a proportionate number of officers, and it was resolved to remodel the academy, on a more liberal and extended scale. The proposal for increasing the academy alluded, in forcible terms, to the importance of establishing a national institution for the education of officers for His Majesty's naval service, on principles as liberal and extensive as circumstances would admit; and it was considered as one that could not fail in producing the most beneficial consequences to the state. The Royal Military Academy at Woolwich had attracted attention; and it was justly observed, that if that establishment cost £9000 annually to the country for the education of 90 cadets, the sum of £6300, for the maintenance and education of 70 scholars for the navy, could not be deemed unreasonable. On the 17th of January, 1806, the following plan was ordered to be carried into execution, viz.:

The academy having received the necessary alterations and additions as would be required for the enlarged establishment, was in future to be named the Royal Naval College of Portsmouth, and the business of it to be conducted by the following persons—

A Governor
A Lieutenant-Governor
A Professor
A Preceptor
A Housekeeper
A Writing Master
A Drawing Master
A French Master
A Dancing Master
A Fencing Master
A Surgeon
The Master-Attendant of the Yard
A Gunner of the Marine Artillery.

Hitherto, the office of governor of the academy had been filled by the commissioner of the yard, but, as might be expected, the duties of this officer, more particularly in time of war, were sufficient to occupy his attention; and, as the government of the academy had always been vested in the Board of Admiralty, it was ordered that the First Lord of the Admiralty, for the time being, should in future be considered the governor of the Royal Naval College. Nor was the commissioner of the yard to take any part in the management of the new establishment, as the same reasons for which he had been excluded from the office of governor operated with equal force against his appointment as lieutenant-governor. The office of lieutenant-governor and inspector was therefore bestowed on a post-captain of the Navy.

Much importance was justly attributed to the office of the professor, in order that the new institution might attain and preserve that character for which it should be, and was intended to be, distinguished. It was proposed that an able mathematician should be appointed from Cambridge, and that three graduates should be nominated by the senate of that university, from whom one should be chosen by the Admiralty; and, in order further to secure a diligent attention from this person to the improvement of the scholars, on which the reputation of the college depended, he was not to receive a fixed salary, but the emoluments of his office were to be derived from the number of scholars actually in the college. This station was looked on as being still more desirable, as the boarding of the scholars was separated from it, as well as all attendance to them out of college hours.

The office of the preceptor, or head master, was looked on also in an important light, as he was to have the general superintendence and management, under the professor, of the whole plan of education, and the control of the scholars at all times. Although he might not be a graduate of a university, he was supposed to have a thorough knowledge of classical learning, moral philosophy, geography, history, and the belles lettres. All concern of providing for the scholars in diet, washing, books, or any thing else, was equally removed from him as well as the professor.

The commissariat duties of the college, if we may so term them, were conferred on a disabled and meritorious half-pay lieutenant, whose care was to superintend the whole domestic concerns of the establishment. He had to furnish a decent and wholesome table for the students, according to a plan which was to be drawn up and modified from time to time by a committee formed of the lieutenant governor, the professor, and the preceptor, according to circumstances. He was to supply the establishment with fuel and candles, for which he was allowed a fixed sum, according to the number of scholars.

It was expected of the writing master that he should be well skilled in the common rules of arithmetic and vulgar fractions, and it was besides desirable that he should possess a competent knowledge of algebra and geometry, so as to be able to assist the professor in his duties. In addition to his salary, an allowance was made to him for lodgings, provided that he could not be lodged like the preceding officers in the college.

The French and the drawing masters were placed on the same footing, no lodging money being allowed them besides their salaries; and a guinea for every student was considered a sufficient remuneration to the fencing master for his attendance. The pay of the surgeon also depended on the number of students in the establishment.

It was required of the master attendant to perform the same duties with the students as before, in addition to which he was to go out with them once a week in one of the cruising ships on the Portsmouth station, and to take them on board any of the ships fitting in the harbour. The master shipwright was also required, during the six summer months, to attend them through the several branches of his department; and the sergeant of the marine artillery was to instruct them in the duties of his profession.

The number of students was increased to 70, out of which it was directed that forty scholarships were to be invariably reserved for the sons of commissioned naval officers, the rest to be filled up by the sons of noblemen and gentlemen. The age at which they were to be admitted was not under thirteen nor more than sixteen; and as the plan of studies might be completed by a boy in two years, although they were permitted to stay three, they were allowed only the two years as sea-time, the remaining to be served as usual. In the admission of students, a preference was always to be given to young men who had "used the sea," on the principle that they were likely to derive a greater advantage from the plan of education than those entirely ignorant of sea service; and the limits of their previous sea-time were fixed at three years.

In order to secure the scholars for the profession of the sea, their parents or guardians were required to enter into a *bond* of security to that effect, of £200; but the parents of those boys who had already been two years at sea were exempt from this regulation. The allowance of four shillings per day being made to each student for 330 days, which he was at the college in each year, independent of the holidays, the general statement of the expense was

Proposed establishment of officers	£1400	0	0
Allowance of 70 scholars at £66........	4600	0	0
Servants and furniture................	300	0	0
Total	£6300	0	0

The annual expense of the former academy was nearly £1200, and the expense of erecting the new college was about £4800.

Such was the original establishment of the Royal Naval College in the year 1806, under the auspices of Lord Barham, when his Lordship resided at the Admiralty; and we are quite certain that the anticipations of its projectors have been realized to the country, at a period when our fleets surpassed in number those of the whole world put together, and required for their safe-conduct all the skill and science of their officers. There could be no better proof of the want of such an establishment, when an officer who could manage a chronometer was a "rara avis" at sea; when he who could observe a lunar was looked on as a prodigy and to "take the sun at noon," besides working the dead reckoning, was considered the "ne plus ultra" of the naval officer's scientific qualifications. It was high time to look about us in His Majesty's navy, when the officers of the East India Company's service had already established their fame for the accuracy of their observations, and when, nearly forty years previous, to their credit be it said, four of them were summoned to the Admiralty, to give their testimony, in presence of the astronomer royal, to the necessity of establishing a Nautical Almanack! What were our naval officers about, then?

To return to our subject. We have yet to trace some alterations in the college, as important as those which had already taken place. The establishment had been now fixed on its present extended scale, and the first event we have to notice, that occurred afterwards, was the superannuation of Mr. W. Bayly, who continued to hold a station in it, but who had been head master of the academy for twenty-one years. Mr. Bayly had accompanied the famous Captain Cook on his last voyage, as astronomer, and was superannuated in December 1807. In 1808, Mr. W. M. Bradley was superannuated, having held the same office in the college, that of second master, as his father did before him. At various times subsequently, we find an increase made in the salaries of several masters of the college, but the establishment of 1806 remained the same.

We now arrive at the period when the coalition of the class of superior shipwrights with the Royal Naval College took place. It was in January, 1816, that the order for this regulation was made; but it was accompanied with some alterations, in those regarding the college students, that must first be noticed. The number of students during war were to be increased to one hundred, which number they were not to exceed, and in peace they were not to exceed seventy. Thirty of these students were to be the sons of commissioned officers, instead of forty as before, and to be educated free of all expense. The remainder was to consist of the sons of noblemen and gentlemen, their clothing and education to be paid for at the rate of £72 per year; and it was determined that in the event of its being necessary to reduce the number of students in time of peace, one half the reduction should be from the class of naval officers' sons. The age of admission was altered, and fixed at 12 to 14 years. The same bond was required from naval officers as before, and another from the parents of the other students, to the amount of £100, to be forfeited if their sons were withdrawn from the service before they had served their time to enable them to pass for lieutenants. The other regulations remained in force as before, and another was added to the effect that, in case a student should be expelled, he should never afterwards enter His Majesty's service.

The consolidated establishment of the college for the education of naval officers and naval architects, was ordered as follows: The governor of the college, as before, was assisted by two lieutenants of the Royal Navy, who were both to reside in the college; the professor, as before, a master of classics, history, and geography, to reside in the college; three assistant masters, to assist the professor in the college, and in the school for naval architecture; a French master, fencing master, drawing and dancing master, as before; and two sergeants of marine artillery. A superintendant of the school of naval architecture, who was formerly a builder; a matron and housekeeper with the surgeon, as before; all of which officers were to be entitled to superannuation, for length of service. The number of students in naval architecture was not to exceed 24, to be admitted according to merit at any age from 15 to 17. In lieu of their existing salaries as apprentices, they were to be paid according to a graduated scale, depending on the number of years they might remain at the school, in which they would be educated free of all expense. The time they were required to remain at the school was seven years, or six, if they had previously served two years in the dockyards, at the end of which time they were to be eligible to fill any situation in the ship-building departments of His Majesty's service. In the event of there being no vacancies, they were to be employed as supernumeraries in the dockyards, until vacancies should occur, with salaries as previously established, provided that it was certified by the professor that they were properly qualified.

A change in the foregoing regulations, respecting the students for naval officers, took place in April, 1821, when it was directed, that the age of admission should be from 12½ to 13½ years, and that none should remain at the college longer than two years, whether they had finished their education or not. The advantage of two years sea-time was, however, secured to those who might finish their plan of education in any period less than that time; and those who had not completed their education when discharged, were allowed a proportionate part of it, according to the progress they had made.

We have thus seen the principal changes that have successively taken place in the Royal Naval College since its first institution as an academy for 40 scholars, in 1729. We have found it in 1773 containing only 15 boys educating for naval officers, and, in 1816, containing 94 educating for naval officers and architects. It remains for us to notice a few further trifling alterations, when we shall find it in its present condition. The foregoing regulations of 1816 had been effected when Lord Melville presided at the Admiralty. In August 1827, when His present most gracious Majesty filled the office of Lord High Admiral, we find that a third lieutenant was substituted for the dancing and fencing masters; and in the month of October following, the sum of £72 which was annually required from the sons of noblemen and gentlemen, as well as civil and military officers, was increased to £100.

In February 1828, an important regulation took place, regarding the advantages which the sons of naval officers had hitherto enjoyed in the establishment of the Royal Naval College. By a new regulation, they were now required to pay the sum of £40 annually, and of the 30 admitted on this plan the sons of military officers were allowed to form a part, the other class paying £100 as before. But as it was now resolved that naval officers should pay for the education of their sons at the college, a more equitable scale of payment, to bear equally on all ranks, was drawn up, of which the following is a copy. This remains in force at the present time.

Sons of Admirals and Generals	£80	0	0
Captains 3 years Post, Colonels, and Lieutenant-Colonels	70	0	0
Captains under 3 years Post, Commanders, and all below that rank, and regimental Field-officers	50	0	0
Sons of Officers, of whatever rank, in Army or Navy, who have lost their fathers . . .	40	0	0
And those of Officers, of whatever rank in either service, whose fathers have died in active service, and whose families have been left in pecuniary distress . . .	20	0	0
Sons of Noblemen and Gentlemen, extended to 40, and to pay	125	0	0

By the foregoing arrangement, it was anticipated that the expenses of the Royal Naval College would be defrayed by its own resources, and that it would be no longer that burden in the public expenditure that it had been.

It remains for us to notice one more material regulation concerning the students of the college. At a time like the present, when so few of His Majesty's ships are employed, the difficulty experienced by Midshipmen in finding other ships, when theirs are paid off, has been considered, with the great advantages enjoyed by the students of the college, not only in receiving an education, but an appointment to their first ships. It was, therefore, thought proper to reduce the time passed at the college, and allowed as sea-time, by one half. This regulation commenced from the Midsummer holidays of 1833, from which period one year was to be allowed to the students, instead of two, as sea-time. This regulation, however, having been made without any regard to the progress of the students in their learning, thereby affording no encouragement to those disposed to apply themselves, a further order, dated in October last, has directed, that a proportionate part only of the year is to be allowed to the students, according to the progress they shall have actually made at the time of leaving the college.

The Royal Naval College may be considered as having done its duty, as having answered an important purpose at an important period in our country's history. The schoolmaster, it has been truly said, is abroad, new institutions are springing up every where, and, among them, a Royal Naval School, which bids fair to reduce the number of candidates for the Royal Naval College. We rejoice at the success of this new school; it is gratifying to find, that, within the short space of a year or two since its first establishment, that it has already received 150 boys, and that the number, at the commencement of next year, will be increased to 230. The day will arrive, when England will have reason to exult in so excellent an institution. It has already obtained the liberal patronage of many illustrious individuals, and, considering the extraordinary increase of officers, the hopelessness of getting their sons educated at the college, and the great expense attending other institutions, it is exactly what was wanted. We trust, as we do not doubt, that it will always flourish. We shall conclude our sketch, with a statement of the regulations in force respecting the admission of young men into the Royal Naval College, and, to satisfy the curiosity of those who take any concern in it, we shall add to it an account of the daily allowance of provision made for them in that establishment.

Every Candidate for admission must, at the time of his application, transmit to the Secretary of the Admiralty, a Certificate of the day of his birth: and, immediately on his attaining the age of 12 years, he must also transmit a Certificate of his good moral conduct from the Master or person under whom he was last instructed; or if he has used the sea, from the Captain under whom he last served. No Candidate will be considered eligible, nor will the order for his admission be given in *any* case, until *both* Certificates are lodged at the Admiralty.

Every Candidate for admission will be expected to know perfectly the first four rules of arithmetic, Reduction, and the Rule of Three.

He will be expected, also, to be able to write English from dictation, and to construct English sentences.

And it is recommended that every Candidate should have in his memory the definitions, axioms, and postulates, in the beginning of Euclid's Elements, by R. Simson.

The parents or friends of every Student shall pay into the office of the Accountant-General of the Navy in London, the amount of the sum that may be due at every vacation, either before the next succeeding meeting of the College, or within one month after such meeting; in default of which the Student's time of servitude will not be allowed to go on.

Every Student, at the end of two years, shall be discharged into one of His Majesty's ships, not being a guard ship; and the time of residence in the College shall be reckoned as one year's service at sea; the remaining five years necessary to qualify the Student for the commission of Lieutenant to be actually passed at sea, or in a sea-going ship.

Every Student, on his admission, shall be required to bring with him the following necessaries—

1. A small trunk.
2. Twelve shirts. three of them night-shirts.
3. Eight pair of white cotton stockings.
4. Eight pair of coloured worsted stockings.
5. Three black silk neckcloths.
6. Two pair of black half gaiters.
7. Six pair of drawers.
8. Three pair of shoes, and one pair of dress shoes.
9. Nine pocket-handkerchiefs.
10. Two pair of gloves.
11. Two pair of sheets.
12. Four pillowcases.
13. Eight towels.
14. Three nightcaps.
15. One table-spoon and one tea spoon (silver.)
16. One set of clothes brushes, combs, and teeth brushes.
17. One small looking glass.
18. One candlestick.
19. One Bible.
20. One Prayer Book (new version of psalms.)
21. A penknife.

And, when the Student is to continue his classic learning,

22. A Latin and Greek Grammar, a Latin Dictionary, and a Greek Lexicon.

Any deficiency in the above articles shall be made good at the return of the Student, after the half-yearly vacations; and he shall not at any time give away, or otherwise dispose of, any part of his clothing, or order any thing new, without special leave of the Lieut.-Governor.

The suits of uniform clothing the Student is to wear while at College will be furnished at *Portsmouth*.

The vacation will consist of six weeks at Midsummer, and six weeks at Christmas

No Student will be permitted to carry with him to the College, on his entrance, or return from the vacation, more than one guinea in his pocket: and, as one shilling a week is allowed out of the public fund to every Student as pocket money, it is particularly desired that their friends do not, on any account, increase this allowance.

Any Student, whose conduct shall be such as to render his expulsion from the College necessary, will never be allowed to enter into His Majesty's naval service.

The parents and guardians of such young gentlemen as may be admitted into the Naval College are particularly desired to take notice, that, at the expiration of two years, all students will be discharged from the College, into such of His Majesty's ships and vessels, as the Lords Commissioners of the Admiralty shall think fit; and that, when such ships are paid off, those who have attained the rating of Midshipmen will not be re-appointed by their Lordships to other ships, but must apply to Captains or Commanders in commission for such re-appointment, in order to complete the remainder of their servitude to qualify them for the commission of Lieutenant. In consequence of which arrangement, no bond will in future be required, that such Students shall not be withdrawn or discharged at their own request from the naval service.

Diet[*] *allowed to the Students at the Royal Naval College.*

Breakfasts Daily.	
Each boy a pint of milk, as it comes from the cow, and a small loaf, weighing 8 ounces.	
Dinners Daily.	
Sunday	Ribs and Surloins of Roast Beef; boiled Plum Pudding.
Monday	Roast Legs of Mutton; Baked Plum Puddings.
Tuesday	Boiled Corned Beef, in the Winter months, and Roasted Beef in the Summer months. Fruit Pies.
Wednesday	Roast Legs and Shoulders of Mutton, Fruit Pies.
Thursday	The same as Sunday.
Friday	The same as Wednesday.
Saturday	Boiled Corned Beef, and Rice Puddings Baked.
Suppers Daily.	
Tea, and Bread and Butter, without limit.	

Each table, or sub-division consisting of ten boys, having a joint weighing, before dressed, *ten* pounds, a baked plum pudding weighing, when dressed, 5 lbs., or a boiled one weighing, when dressed, 7¾ lbs., or a pie, as before stated, with potatoes, bread, and beer, (the two latter without limit.)

The students do not consume any thing like the quantities placed before them, but much remains after every meal, which the matron has permission to give to some poor old women pensioners.

A student from each sub-division inspects the provisions every morning at half-past eight, in the presence of a lieutenant, the matron, and a petty officer; and, if any reasonable fault be found with the meat, the butcher is directed to change it, or other meat is purchased in the market, at the contractor's expense.

LITERARY AND SCIENTIFIC NOTICES.

BOOKS.

An Apology for English Shipbuilders, shewing that it is not necessary that the country should look to the Navy for Naval Architects. Wilson, London. 1833.

We received this pamphlet at a late hour, but to discuss fully the important subject to which it is devoted in all its various ramifications touching the qualities required for a Surveyor of the Navy, and the various points in Naval Architecture, treated on—to do this to half the extent that would be necessary would fill two or three numbers of the Nautical Magazine. Now we are not for treating our readers after this fashion, but we will say a passing word or two on it. We shall not stop to look at the various opinions cited by the author (opinions too of experienced men, we believe) of the qualifications of Captain Symonds for his present station; but, without any reference to that gentleman, we shall briefly state our own humble opinion, that an experienced naval Captain is after all better fitted for that station than a landsman. We are by no means for setting aside science—that has been too often done already, at least so says our author; but we apprehend, that however well versed in its profound truths a man may be, it would be a difficult matter to find another agreeing with him in opinion on the vast subject of Naval Architecture. Each has his favourite opinion, his favourite theory, which he pursues with headstrong determination; and we suspect that *science*, after all, has not so often bowed to "the pen of authority," as the author of the Apology would lead us to believe. But it is to the wide field of experience that we attach the most importance—the observation by a seaman's eye, of the behaviour of a ship under different circumstances at sea. It is well known that in the seaman's duty there is always something new to be learned; therefore, to look for the combination of his qualities with the scientific acquirements of the mathematical professor who has passed his life in the precincts of the University, we believe would be something like looking for the sun at midnight. We are not advocating the appointment of Captain Symonds in particular, or his "principles of construction," about which so much has been said; but we do rejoice, that a certain system of building has been broken through, and that we are not likely to see more of a class of vessels that could neither "fight nor run away," for they had not the power of doing either. But as far as regards the present Surveyor's ships, we shall record our opinion by saying, that we shall be much mistaken if our seamen do not find themselves *more comfortable* in the presence of an enemy with one of Captain Symonds' construction to handle, than one of those built before he entered on his present arduous duties—and these duties, we believe, include some that have never yet been performed by a Surveyor of the Navy.

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[*] See p. 294, No. 15, for Diet allowed at the Royal Naval School.

There is one point on which we must set the author of the "Apology" right, and we do so from no personal motive towards Capt. Symonds. Alluding to Captain Symonds' "principles of construction," of which he had not the means of judging by the qualities of the Vernon, as the opinions of her were "so absurdly contradictory," that it was "impossible to draw any conclusion from them," (a pretty tolerable picture of the deductions to be obtained from science,) at page 10, he gives Captain Symonds the credit of having promulgated his principles for open discussion, by saying, "he has published a pamphlet in the United Service Journal, (No. 44, for July, 1832.)" Now, we we would ask even the bitterest opponents of Captain Symonds, whether it is likely that he should adopt such a measure as to publish to the world, through the medium of the United Service Journal, his first undigested ideas on Naval Architecture, when he had just stepped into the public office which was to preside over and direct the construction of our men-of-war. Would it not be more likely that he should leave the world to find them out by his productions, as had been done before him? Such a proceeding as that attributed to him, would have been rather indiscreet at such a time; but it was one that was not adopted by the Surveyor. The fact is, that the paper alluded to was printed long before Captain Symonds even dreamt of becoming Surveyor of the Navy, and it was reprinted in the United Service Journal perfectly contrary to his wishes and intentions. We consider it no more than justice to state thus much, as we have not yet seen it asserted in any publication, but we have no desire to follow the "Apology" further.

DESCRIPTION of various PLANS for the IMPROVEMENT of NAVAL ARCHITECTURE, with Illustrative Sketches. By R. F. S. Blake, of the Royal Dockyard, Portsmouth. Norie, London, 1833.

Mr. Blake has produced a useful record of inventions proposed by himself at various periods, in which he has shewn much talent and ingenuity, and a thorough knowledge of his profession. It is a work that may be consulted with advantage, and particularly so when it is desired to make the most of timber, in the manner which Mr. Blake shews he has done on many important occasions. It was our intention to have laid before our readers Mr. Blake's proposed fid for topmasts, but a pressure of other matter has obliged us to reserve it for our next number, when we shall take the opportunity of transferring the description of it from the present valuable little work to our own pages.

CHARTS.

THE HARBOUR OF SANTA MARTHA, South America. From a Survey of Captain Tait, R.N. Admiralty. Size 11½ by 15 inches. (788.)

An important addition has been made to this plan in the position of the Druid Rock off Point Betin, the distance of which from this point has been carefully examined and sounded by Messrs. W. Baker and F. J. Evans, of H.M.S. Winchester.

ENTRANCE OF THE RIVER DOURO, by Commander Edward Belcher, H.M.S. Ætna. 1833. Size, Half Double-Elephant. Admiralty. (141.)

It is not often that we meet with a plan more to our liking than this. It is one that quite coincides with our ideas of what a seaman's chart should be; combining the skill of the surveyor, the draftsman, the engineer, and, lastly, that of the engraver, whose productions (by the way) we are not in the habit of eulogizing; but this plan of the entrance of the Douro does ample credit to the skill of Messrs. J. and C. Walker, as the general arrangement of the data does to the judgment of the hydrographer. We are quite sure that the military details of this plan would have been of essential service to the generals of both Don Pedro and Don Miguel in the late struggle at Oporto: but with those we have nothing to do. If Oporto is ever to be entered by the seaman with a chart alone, this is the one to which he may trust. Here he has his leading marks well laid down both in the plan and perspective.

THE SEA OF MARMORA, with the Dardanelles and Bosphorus. From the chart published at the Depôt de la Marine. 1866. Size, Half Double-Elephant. Admiralty. (496.)

In the same sheet of which we have the Straits of the Dardanelles and the Bosphorus, or the Boghuz of Stamboul enlarged: besides some little plans, among which is one of the Harbour of Pasha, in

Liman Pasha Island. We are glad to see this useful chart published, as it gives us a correct idea of the confines of old Neptune in a part of the world that is daily gaining in interest. The valuable observations lately made by Captain E. Lyons and Capt. the Hon. F. W. Grey, as well as those of Captain R. D. Middleton, have been employed in the construction of this chart in conjunction with that of the Depôt de la Marine. We also see the plans and views of Mr. C. Tyers, midshipman of the Blonde, introduced here. In our 13th and 14th numbers we inserted the sailing directions of Captain Middleton for these parts, which, with the chart before us, will be found valuable acquisitions to the navigator.

EXPERIMENTS ON CHRONOMETERS. *Glass Balance Springs.*

MR. EDITOR,

A short time ago you were so kind as to announce to the scientific world our introduction of a Balance Spring made of Glass, into the Chronometer; and as you did us the honour of wishing us every possible success in our endeavour to bring it to perfection, we presume some account of our progress with it cannot be otherwise than acceptable to you and your readers. We have good reasons for believing in our ultimate success, from its performance at the Royal Observatory; and the rate of it was so good, that the Lords Commissioners of the Admiralty, at our request, ordered a trial to be made at Portsmouth, to prove how far it was capable of resisting the concussion arising from the discharge of guns. The Commander-in-Chief at Portsmouth, Admiral Sir Thomas Williams, Bart., who, we are proud to say, immediately saw the importance of our invention, and felt much interest in the experiment, immediately directed the Rev. Mr. George Fisher, the Chaplain of H.M.S. Victory, to superintend the trial on board H.M.S. Excellent.

Before the trial commenced, a circumstance took place that fully verified the old adage, that "out of evil there comes good." We will relate this, with your permission, as it was communicated to us in London, in the following letter from Mr. Fisher:—

(Copy) "Victory, Portsmouth Harbour,
29th August, 1833.

"Gentlemen,

"I cannot express my vexation in returning you the Chronometer in the state which it is in. It met with a fall from a table to the deck of H.M.S. Excellent, which has broken the verge, but you will be glad to find, after so severe a fall, that the glass spring is uninjured.

"I am, Gentlemen, your humble servant,
"GEORGE FISHER."

"To Messrs. Arnold and Dent, 84, Strand."

On opening the Chronometer, we found both the verge pivots broken off, and the Balance Spring perfectly uninjured, although, notwithstanding its fall, it came to London as a common coach parcel. We repaired it, and forwarded it by coach to Portsmouth for further trial. We now present you with the results of Mr. Fisher's experiments, supplied to us by the Lords Commissioners of the Admiralty.

We are, Sir, your obedient servants,
Arnold and **Dent.**

(Official Report.)

(Copy.)

" H.M.S. Victory, Sept. 13, 1833.

" Sir,

" I have the honour of enclosing to you, for the information of the Lords Commissioners of the Admiralty, the following report of experiments made on board H.M.S. Excellent at this port, for the purpose of determining the effect produced by the concussion arising from the discharge of guns, upon a Chronometer having a Glass Balance Spring, invented by Messrs. Arnold and Dent, Chronometer-makers, in consequence of an official memorial directed to Admiral Sir Thomas Williams, Bart., authorising me to conduct the necessary experiments to that effect.

" I have the honour to be, &c.
"George Fisher."

" To Captain Beaufort, R.N."

13th Sept. 1833.	Distance of Chronometer from a 24lb. gun shotted.	No. of discharges.	Situation of Chronometer with respect to Gun.	Effect produced on Chronometer.
Experiment 1.	42 feet . .	3	Placed *bare* on the same deck abreast of the gun . .	None.
2.	32 ,, . .	3		None.
3.	20 ,, . .	2		None.
4.	15 ,, . .	2		None.
5	12 ,, . .	4	Do. on the carriage of the adjacent gun	None.
6.	Broadside from the main deck guns shotted . .	1	Do. on the lower deck, 9 feet below one of the midship main-deck guns . .	None.

We have much pleasure in laying the foregoing before our readers, because we consider it a triumphant answer to all objections against the Glass Balance Spring, on account of its brittle nature. We have met with many who have treated the whole subject as chimerical, but Messrs. Arnold and Dent having thus established its character in point of strength for its intended purpose, we shall shortly lay before our readers a statement of its rate at the Royal Observatory. And, if we are not greatly mistaken, this will nearly equal those of some of the best chronometers. If this invention does so much in its infancy, when it is scarcely beyond its age of experiment, what may we not expect from it hereafter?—Ed.

Ericsson's Caloric Engine.—Various attempts have been made to construct engines founded on the principle of the expansion of atmospheric air by heat, but these attempts have still remained without practical success. The caloric engine, invented by Captain Ericsson, a large working model of which we have seen in vigorous operation, seems to promise results of a very different kind. Air and steam must now engage in a desperate and probably a deadly struggle for the mastery. If the sanguine, and we think not unreasonable hopes of the inventor be realized, steam has seen its best days.

The principle of the engine is founded on the well-known property of fluids, that they transmit their pressures equally in all directions. It consists of two cylinders of unequal diameters, the area of the piston of the one being double that of the other. These cylinders are connected together by means of a series of pipes, called a regenerator. If air be condensed in these cylinders, it is obvious that the superior pressure exerted on the piston of the large cylinder will vanquish the pressure on the small one, and motion will take place till the larger piston has reached the top of the cylinder, whilst the small one has been pushed to the bottom. Here all motion would cease, if heated condensed air were not allowed to enter above the large piston, and below the small one, so as to depress the large one to the bottom of the cylinder, and raise the smaller one to the top. But this being done by sliding valves, exactly as in the steam-engine, the motion is constantly kept up. On this principle, then, we could obviously have an air-engine, which would perform its operations by the sudden heating and cooling of condensed atmospheric air. But this is not the principle which distinguishes the caloric-engine from others of the same class. The marked difference lies in this—that the same heat is made to circulate through the engine, and perform the same duty over and over again, instead of being thrown into a cold condenser or into the atmosphere, as so much waste fuel.

The regenerator consists of a number of pipes, having numerous discs of metal placed within them, to make the air circulate in eddies, and either deposit its heat in the pipes or receive it from them, according to the difference of temperature. These pipes are enclosed in a long cylinder of sheet iron, which has also discs of metal so arranged that the air, passing along the outside of the pipes, may also travel in a circuitous route, and deposit its heat, or receive it, according to circumstances.

The heated air, after having done its duty in the large cylinder, is made to circulate through the regenerator, and deposit a very large quantity of its caloric before it reaches the cold cylinder. The cold air from the small cylinder is at the same time passing along the interior of the pipes to the tubes above the furnace, and is thus carrying back the same caloric to do the same work over again. But though we have only mentioned atmospheric air as the fluid actually employed, it is obvious that any other fluid, whether aeriform or liquid, may be used in the same manner. But a simple statement of numerical facts, furnished by the engineer himself, will be of more value in turning the attention of the public to this invention than any general observations which we can possibly make. The engine actually constructed has two cylinders of eighteen inches stroke each, the one being fourteen inches diameter, the other ten and a quarter inches. The working pressure is 35lb. above that of the atmosphere. The fly-wheel performs fifty-six revolutions in a minute. The break-wheel is two feet in diameter, and loaded with a weight of 5,200lb. The power of the engine is calculated to be equal to five horses. The regenerator has seven tubes about seven feet long and two inches diameter. The engine requires only two pound of coal per hour for the power of one horse, and the whole heat which is actually lost out of this quantity, or not returned by the regenerator, is only three pound per hour; so that the other parts are lost by radiation,

&c., which may be much diminished in an engine on a larger scale, and by surrounding certain parts by imperfect conductors.

IMPROVEMENTS IN THE SEXTANT,—A sextant, fitted with a very small lamp for the purpose of reading off an observation at night, has been submitted to our inspection. The lamp, which is on a diminutive scale, is fixed on the index limb, and throws a sufficient light over the index for reading by, the glare being softened by the light passing through a small piece of ground glass. The ingenious inventor, Mr. Gray, an optician of East Smithfield, proposes various improvements in it, that, we have no doubt, will make it fully answer the purpose for which it is intended.

THE GATE OF MYCENÆ.—*Dickinson, Bond Street.*—A spirited and well-executed lithographic drawing of the Leopard's Gate at Mycenæ, by Mr. C. Bradbury, from the original of Lieut. Wolfe, R.N. We believe this to be the best representation of that curious relic of the Homeric age, that has yet found its way to our country. The antiquary will justly prize it as one of the most valuable and important documents of his collection.

THE LATE DR. BRIGGS.—We have received a paper vindicating in forcible terms the character of the late unfortunate Dr. Thomas Briggs, who accompanied the expedition to the Niger last summer. We alluded to this gentleman in our October number, and regretted to find that so wanton an attack had been made on his capabilities as surgeon to the expedition, as that which had appeared in the Kelso Chronicle. This, however, has been most ably and completely refuted in the paper before us; and the character of Dr. Briggs, we venture to say, will not eventually suffer by the insinuations made against it. We were desirous of going further into the question than our limits allow us, but we must content ourselves with briefly quoting, in the words of the Rev. J. Bowstead, of Cambridge, who, besides bearing testimony to his professional qualifications, observed of him when he heard that he was going to the Niger, "Of all men, he is one of the best adapted for such an expedition. His facilities in learning languages; his extensive and varied information; the energy of his character; and the spirit of enterprise that actuates him: all these rare qualifications combine in him to form a character singularly suited for so grand and bold an expedition."

PORT WILLIAM.—We observe with much satisfaction that, notice has been given in the papers, that application will be made to Parliament, in the course of the next session, for leave to bring in a bill authorizing the construction of this magnificent harbour. We have said that, sooner or later, Port William would be established, and we shall consider ourselves as having conferred a benefit on the country in being one of its earliest advocates.

ROYAL GEOGRAPHICAL SOCIETY. CAPTAIN ROSS.—This Society held its first meeting for the season on Monday evening, the 11th Nov. when the royal premium for 1833 was presented to Captain Ross. The chair was filled by H. Hamilton. Esq., who addressed the veteran navigator in a brief but judicious manner, expressing the high sense which the Society entertained of his merits, and alluding in eloquent terms to the singular fortunes of the expedition. He mentioned, among other circumstances not generally known, that so entirely had the relatives of Captain Ross lost all hopes of his return, that they had even opened his will. He referred to the skill and care requisite to preserve the health and lives of a crew in long voyages—the chief theme of the panegyric addressed to Captain Cook by Sir J. Pringle, late President of the Royal Society—and justly remarked, that such skill and care were never exerted under more difficult circumstances, nor with more wonderful success, than in the late expedition. He then proceeded to pronounce a warm and well-merited eulogium on the second officer of the *Victory*, Commander J. Ross. This young officer accompanied his uncle in the first expedition to Lancaster Sound in 1818. He likewise accompanied Captain Parry in his three voyages; and in the last of them, when it was resolved to abandon the *Fury*, he was the officer directed to stow away her provisions. After the lapse of four years he was again led to the same spot by a singular chain of events, and recovered those very stores and provisions, without which the expedition would have been ruined. "Captain J. Ross," continued Mr. Hamilton, "having spent thirteen summers and eight winters in the arctic regions, is now happily returned to us, to communicate the results of his geographical and scientific researches, in the full possession of health, youth, and experience; of a well-earned, and widely extended fame." The meeting was unusually numerous, and much enthusiastic feeling was manifested in the course of the evening. The Geographical Society goes on prosperously. While its prizes are bestowed on such men as Lander, Biscoe, and Ross, it is rendered illustrious by the honours which emanate from it.—*Athenæum.*

ROYAL SOCIETY.—Sir John Herschell's account of his observations "On Nebulæ and Clusters of Stars, from the Years 1825 to 1833," was read. This highly interesting communication was for the most part in a tabular form, and required almost constant reference to the drawings by which it was accompanied. Sir John stated the difficulties that impede the observation of the nebulæ, their faintness, their irregular distribution, only three months in the year being favourable for such observations, and in these the moon and twilight must be absent. Still his catalogue contained 2,500 nebulæ: but 2000 of these had been already observed by his father; and of the 500 new, there was only one of remarkable magnitude. Sir John directed attention to the figures of the nebulæ he had sent, the unity of whose design, and symmetry of whose parts, shewed that they formed a definite system. He then spoke of a remarkable phenomenon, which, we believe, has not been previously observed. The nebulous appearance of some of the fixed stars in peculiar states of the atmosphere. These photospheres he attributed to the intervention of some of those rare meteors whose kindling forms the aurora borealis. In conclusion, Sir John recommended astronomers to direct their earnest attention to the nebulæ and double stars, especially suggesting micrometrical observations to determine whether they have a rotatory motion, and to the formation of a complete catalogue of nebulæ, &c., and also a catalogue of missing nebulæ.—*Athenæum.*——Sir John has left England for the Cape of Good Hope in the ship Catherine Stewart, Forbes.

WHALE FISHERY.—The principal drawback to the whaling trade being the great length of time the animal takes to die after being struck, it had been determined on at Sydney to try the novel experiment of dipping the lances into prussic acid, or to have a cavity in the harpoon in which should be lodged a certain quantity of the acid, that would flow into the wound of the animal by the opening of a valve, which it was supposed would accelerate the death of the whale without injuring the carcass. The ship Betsey, Captain Petrie, which was about to commence operations, was provided with the necessary materials, and was to be the first to make the trial, which, if successful, would, it was considered, be of infinite importance to the whaling trade.

NAUTICAL MISCELLANY.

NAVAL INTELLIGENCE.

The Royal Navy in Commission.

⁂ S. V. signifies Surveying Vessel, and St. V. Steam Vessel.

Actæon, 26—Hon. F. W. Grey, 1st Sept. at Stamboul.

Ætna, S. V. 6—Com. W. G. Skyring, 13th Nov. sailed for Africa.

African, St. V. — Lieutenant J. Harvey, 18th Oct. arrived at Lisbon.

Alban, St. V. — Lieutenant A. Kennedy, 27th Aug. at Demerara.

Alfred, 50—Capt. R. Maunsell, 11th Sept. arrived at Alexandria, from Napoli de Romania.

Algerine, 10—Com. Hon. J. F. F. De Roos, 23d Sept. left Rio for England. 16th Nov. arrived at Spithead. 20th Nov. sailed for Chatham, to pay off.

Alligator, 28—Captain G. R. Lambert, 18th April arrived at Singapore from Madras.

Arachne, 18—Com. W. G. Agar, 4th Sept. at Demerara.

Andromache, 28—Capt. B. Yeoman. Hamoaze, fitting.

Ariadne, 28—Capt. C. Phillips, 13th Aug. at Bermuda.

Asia, 84 — Rear-Admiral Sir G. Parker, C.B., Captain P. Richards, Tagus, 27th Oct.

Astrea, 8—Capt. W. King, Falmouth, superintendent of Foreign Packets.

Athol, *Troop Ship*—Mr. A. Karley, 27th October, arrived at Plymouth from Lisbon.

Badger, 10—Com. G. F. Stowe, Simon's Bay.

Barham, 50—Capt. H. Pigot, 1st Sept. at Nauplia; 2d Oct. Malta.

Beacon, S. V.—Com. R. Copeland, Surveying service, Archipelago.

Beagle, 10, S. V.—Com. R. Fitz-Roy, 13th July Monte Video.

Belvidera, 42—Capt. Hon. R. S. Dundas, 27th Sept. arrived at Madeira; 16th Oct. sailed for Lisbon; 27th Oct. arrived at Lisbon: 21st Nov. arrived at Portsmouth. Taken into harbour, to pay off and re-commission.

Blonde 46—Capt. T. Mason, C.B. Portsmouth, fitting.

Brisk, 3—Lieut. Stevens, 15th June at the Gambia; arr. there 14th.

Britannia, 120—Vice-Admiral Sir P. Malcolm, Captain P. Rainier, 23d October, at Vourla.

Britomart, 10—Lieutenant H. Quin, 24th August arrived at the Cape; remained there 7th Sept.

Buffalo, *Store Ship*—Mr. F. W. R. Sadler, Master, 17th July at Rio; 21st July sailed for Australia.

Caledonia, 120—Captain T. Brown, 18th Oct. sailed for Malta, from Lisbon; 23d Oct. arrived there; 31st remained.

Carron, St. V.—Lieut. Com. J. Duffill; 1st Nov. arr. at Lisbon.

Castor, 36—Capt. Rt. Hon. Lord John Hay, 18th Sept. off Oporto; 4th Oct. arr. from Vigo at Lisbon.

Ceylon, 2.—Lieut. H. Schomberg, Malta.

Challenger, 28—Capt. M. Seymour, 11th Oct. went out of harbour, and put to sea to try sailing qualities; 19th at Spithead, 20th sailed for South America. Passengers, Col. Walpole and W. Chamberlain, Esq., Consuls to Coquimbo and Valparaiso.

Champion, 18—Com. Hon. A. Duncombe, 27th July off Tenedos, from Alexandria; 1st Sept. at Malta.

Charybdis, 3 — Lieut. Com. R. B. Crawford, 23d Sept. left Ascension for Gambia and England, with the crew of H. M. B. Badger, left at the Cape; 17th Nov. arr. at Portsmouth; 20th went into harbour.

Cockatrice, 6—Lieut. Com. W. L. Rees, Rio Janeiro.

Cockburn, 1—Lt. Com. C. Holbrook, Kingston, Lake Ontario.

Columbia, St. V. 2—Lieut. Com. R. Ede, 9th November, sailed from Falmouth for Lisbon.

Columbine, 18—Com. O. Love, 6th October, arr. at Port au Prince from Jamaica.

Columbine, St. V.—Lieut. R. Ede, Portsmouth.

Comet, St. V. — Mr. T. Allen, Woolwich.

Comus, 18 — Com. W. Hamilton, 1st Sept. sailed from Bermuda fyr Jamaica.

Confiance, St. V. 2—Lieut. Com. J. W. Waugh, 10th Nov. arr. at Falmouth.

Conway, 28—Captain H. Eden, 16th Sept. arrived at Rio; remained there 23d Sept.

Cordelia, 10—Com. C. Hotham, 15th Oct. arr. at Portsmouth. Left Malta 1st Sept. 17th October sailed for Sheerness, to pay off.

Cruizer—Com. Jas. M'Causland, 15th Nov. arr. at Plymouth; 19th sailed for West Indies.

Curaçoa, 26 — Capt. D. Dunn, 13th April arrived at Sincapore, from Bombay and Batavia.

Curlew, 10—Com. H. D. Trotter, 9th May captured a vessel with 290 slaves on board, off Fernando Po.

Dee, St. V. 4—Com. W. E. Stanley, (*b*) 29th, Chatham.

Dispatch, 18—Com. G. Daniell, 12th Oct. arrived at Barbadoes from Jamaica.

Donegal, 78—Capt. A. Fanshawe, 27th Oct. in the Tagus.

Dromedary—R. Skinner, Bermuda.

Dublin, 50—Capt. C. Hope, 29th June at Coquimbo; 8th July arr. at Lima.

Echo, St. V. 2—Lieut. Com. R. Otway, Woolwich.

Edinburgh, 74—Capt. James R. Dacres, Portsmouth, fitting.

Endymion, 50 — Captain Sir S. Roberts, Knt. C.B. 31st Oct. sailed for Lisbon; 20th Nov. arr. at Plymouth for repairs, having been damaged in a gale of wind in the Bay, and got on shore going into the Tagus.

Excellent, 58—Capt. T. Hastings, Portsmouth.

Fair Rosamond, *Schooner*—Lieut. Com. G. Rose, 22d Aug. in the Tagus; 30th Aug. sailed for Sierra Leone.

Fairy, S. V. 10—Com. W. Hewett, 11th Nov. arr. at Woolwich.

Favorite 18—Com. G. R. Mundy, Portsmouth, 21st Oct. went out of harbour; 24th to sail for Mediterranean.

Firebrand—Lieut. W. G. Buchanan, Irish station.

Firefly, 2—Lieutenant J. M'Donnel, 9th July at Jamaica; 24th Aug. sailed from Port-au-Prince.

Firefly, St. V.—Lieut. T. Baldock, 18th Oct. arr. at Malta: 15th November, arr. at Falmouth.

Flamer, St. V. 6—Lieut. R. Bastard, 27th touched at Portsmouth on way to Falmouth; 29th arr. at Plymouth; 30th sailed for Falmouth and Mediterranean.

Fly, 10—Com. P. M'Quhae, 14th Oct. at Halifax; 18th to sail for Bermuda.

Forester — Lieut. G. Miall, 28th sailed for African Station.

Forte, 44—Capt. W. O. Pell, 2d Sept. at Madeira; 3d sailed for Halifax.

Gannet, 18 — Com. J. B. Maxwell, 6th July left Jamaica for Halifax; 30th July arrived; 13th Aug. left for Bermuda.

Griffon, 3 — Lieutenant E. Parlby, Gold Coast.

Harrier, 18—Com. H. L. S. Vassal, 23d April sailed from Sincapore; 25th July at Trincomalee.

Hermes, St. V. — Lieut. J. Wright, 2nd Nov. arr. at Portsmouth; 8th sailed for Woolwich; 11th arrived there. Ordered to pay off.

Hornet, 6—Lieut. F. R. Coghlan, running between Monte Video and Rio Janeiro.

Hyacinth, 18—Com. F. P. Blackwood, 13th July sailed for East Indies; spoken 6th Aug. 32° S. 12° E.

Imogene, 18—Capt. P. Blackwood, 5th July, spoken off Sydney, from New Zealand. All well.

Investigator, 16, S. V.—Mr. G. Thomas, Woolwich.

Isis, 50 — Captain J. Polkinghorne, left Ascension previous to 15th Sept. for a cruize on the African Coast.

Jackdaw, S. V.—Lieut. E. Barnett, 14th June arrived at Nassau. Surveying Service.

Jaseur, 18—Com. J. Hackett, Sheerness, fitting.

Jupiter, *Troop Ship*—Mr. R. Easto, 11th Aug. touched at Mauritius on way home from Ceylon; 26th Sept. at Ascension; 7th Nov. arrived at Portsmouth with part of 82d regiment — Passengers, Com. W. Shepherd, and Lieut. Lloyd, of H.M.S. Melville.

Larne, 18—Com. W. S. Smith, 22d Aug. at Jamaica; 15th Sept. at Bermuda.

Leveret, 10—Lieut. G. Triall, 20th Oct. arr. at Plymouth.

Lightning, St. V.—J. Allen, 25th Nov. at Woolwich.

Lynx, 10—Lieut. Com. H. V. Huntley, Portsmouth, fitting.

Madagascar, 46—Capt. E. Lyons, July at Nauplia. Returned from Turkey with King Otho, after performing quarantine at Syra. 1st Sept. at Nauplia.

Magicienne, 24—Capt. J. H. Plumridge, 13th to 19th April at Sincapore; 9th June at Madras; left Batavia 8th May.

Magnificent, 4 — Lieut. J. Paget, Port Royal.

Malabar, 74—Capt. Hon. J. Percy, 30th July at Constantinople; 1st Sept. off Nauplia. The Malabar sails from this to join the squadron on the 1st of August; she beats the whole of the squadron on every point of sailing, except the Barham—and the latter has very little advantage over her.

Mastiff, 6, S. V.—Lieut. T. Graves, Imbro 4th July; 18th off Dardanelles.

Melville, 74 — Vice - Admiral Sir John Gore, K.C.B., Capt. H. Hart, 9th July sailed from Mauritius for Ceylon.

Messenger, St. Transport—Mr. J. King, arr. at Woolwich on 9th, having been in attendance on H. R. H. the Duchess of Kent.

Meteor, St. V.—Lieut. Symons, September at Ancona.

Monkey, — Lieut. ———, 26th May at Jamaica.

Nautilus, 10—Com. Rt. Hon. Lord G. Paulett, 29th Oct. arrived at Plymouth; 1st Nov. arrived at Portsmouth, to pay off; 5th Nov. sailed with sealed orders.

Nimble, 5—Lieut. C. Bolton, 3d July at Havana.

Nimrod, 20—Com. J. Mc. Dougal; 18th Sept. in the Douro.

Ocean, 80 — Vice - Admiral Sir Richard King, Bart. K.C.B., Capt. S. Chambers, Sheerness.

Onyx, 10—Lieut. A. B. Howe, Plymouth station.

Orestes, 18—Com. Sir Wm. Dickson, Bart. 8th Nov. went out of harbour; 13th Nov sailed for Falmouth, to take on board Mr. Grant, Secretary of Legation to the Embassy at Lisbon, and then proceed to Lisbon; 17th sailed from Falmouth.

Pallas, 42 — Capt. W. Walpole, 9th and 19th July at Jamaica.

Pearl, 20—Com. R. Gordon, 4th August at Jamaica.

Pelican, 18—Com. J. Gape, 2d October at Malta from Tunis.

Pelorus, 18—Com. R. Meredith, 6th June sailed for Ceylon, from Mauritius; expected at the Cape in Aug.

Phœnix, St.V.—Com. R. Oliver, Woolwich.

Pickle, 5—Lieut. C. Bagot, Bahamas.

Pike, 12—Lieut. A. Brooking, 23d Sept. sailed for Lisbon and Oporto; 3d Oct. arr. at Lisbon.

Pluto, St. V.—Lieut. T. R. Sulivan. The engines of the Pluto had been repaired at

Ascension, by artizans of the garrison, by which the necessity of her return to England was prevented.

Prince Regent *Yacht*—Capt. G. Tobin, Deptford.

Pylades, 18—Com. E. Blankley, 17th July sailed for Valparaiso.

Pyramus—26th July Plymouth Sound; 3d September left Madeira, sailed in charge of Forte.

Racer, 16—Com. J. Hope. Portsmouth, 26th Aug. went out of basin; 5th Sept. anchored at Spithead; 12th Sept. sailed in company with Lightning for Plymouth; 20th Sept. sailed from Plymouth.

Racehorse, 18—Com. F. V. Cotton, 28th Sept. arrived at Barbadoes; 10th Oct. sailed for Bermuda.

Rainbow, 28—Capt. Sir J. Franklin, Knt. 10th Aug. off Hydra; 15th Aug. at Nauplia; expected home.

Raleigh, 18—Com. A. M. Hawkins, 1st Sept. at Corfu.

Rapid, 10—Lieut. Com. F. Patten, 1st of Oct arr. at Spithead; 20th sailed for South America.

Rattlesnake, 28—Capt. C. Graham, left Rio 4th Sept.; arr. at Portsmouth 29th Oct. with 400,000l. in specie and bullion. Passengers, Capt. T. Hurdle, R.M., Lieut. J. S. Ellman; 31st Oct. in harbour.

Raven, S. V. 4—Lieut. W. Arlett, 13th Nov. sailed for Africa.

Revenge, 78—Capt. D. H. Mackay, 16th October arrived at Lisbon; 27th in the Tagus.

Rhadamanthus, St. V.—Com. G. Evans, 9th July at Jamaica.

Ringdove—Com. W. F. Lapidge, Plymouth, fitting.

Rolla 10—Lieut. H. F. Glasse; Plymouth, fitting.

Romney, *Troop Ship*—Mr. R. Brown, 2nd Nov. arrived at Portsmouth from Cork with troops.

Rover, 18—Com. Sir G. Young, Bart., 12th July cruising off Tenedos.

Royal George *Yacht*—Capt. Right Hon. Lord A. Fitzclarence, G.C.H., Portsmouth.

Royal Sovereign *Yacht*—Capt. C. Bullen, C.B., Pembroke.

Royalist, 10—Lieutenant R. N. Williams, Plymouth station.

St. Vincent, 120—Capt. H. F. Senhouse, 4th Oct. Malta. Ordered home.

Salamander, St. V.—Com. W. F. Austin, 3d Oct. arrived at Portsmouth from Plymouth with troops, and sailed for Dover, 18th Nov. conveying troops between that place and Guernsey.

Samarang, 28—Capt. C. H. Paget, 4th Aug. arrived at Rio from Bahia, and sailed 17th for Valparaiso.

San Josef, 110—Admiral Sir W. Hargood, Capt. G. T. Falcon, Hamoaze.

Sapphire, 28—Capt. Hon. W. Trefusis, 4th Sept. at Trinidad.

Satellite, 18—Com. R. Smart, 9th. Sept. arr. at Bahia from Rio.

Savage, 10—Lieut. R. Loney, 2d Nov. sailed for Lisbon.

Scout, 18—Com. W. Hargood, 1st Sept. at Nauplia.

Scylla, 18—Com. Hon. G. Grey, 7th July arr. at Malta from Tripoli. 2d Oct. at Malta.

Seaflower, 4—Lieut. J. Morgan, 12th Sept. sailed for the westward.

Serpent, 16—Com. J. C. Symonds, 31st Aug. arrived at Bermuda; 3d Sept sailed for Barbadoes; 21st Sept. at Trinidad sailed for Jamaica.

Skipjack, 5—Lieut. W. Shortland, 18th July sailed from Halifax.

Snake, 16—Com. W. Robertson, 4th Sept. at Rio Janeiro.

Sparrow, *Cutter*—Lieut. C. W. Riley, 31st Oct. arrived at Lisbon.

Sparrowhawk, 18—Com. C. Pearson, Portsmouth, fitting.

Spartiate, 74—Rear-Admiral Sir M. Seymour, Capt. R. Tait, 4th Sept., at Rio Janeiro; 23d September sailed on a cruize.

Speedwell, 5—Lieut. Crooke, 17th May Sept. arrived at Maranham.

Speedy, *Cutter*—Lieutenant J. P. Roepel, Portsmouth Station.

Stag, 46—Capt. N. Lockyer, Sept. 12th in the Tagus.

Swan, 10—Lieut. J. E. Lane, North Sea station.

Sylvia, 1—Lieut. T. Henderson, Portsmouth station.

Talavera, 74—Capt. E. Chetham, 20th Oct. left the Tagus for Mediterranean.

Talbot, 28—Capt. R. Dickinson, C.B. 11th Aug. at Mauritius: to proceed to India, and return home.

Thunderer, 84—Capt. W. F. Wise, C.B., Sheerness, fitting.

Thunder, S. V.—Commander R. Owen, 14th October, at Demerara; employed surveying.

Trinculo, 18-Lt.Com.Thompson, Gold Coast.

Tweed, 20—Com. A. Bertram, 28th Aug. at Jamaica; 15th Sept. at Bermuda.

Tyne, 28—Capt. Rt. Hon. Lord James Townsend, 29th June at Coquimbo.

Undaunted, 46—Rear-Adm. Warren, Capt. E. Harvey, 26th June Cape of Good Hope; 28th June sailed for Madras.

Vernon, 50—Vice-Admiral Sir G. Cockburn, K.C.B., Capt. Sir G. A. Westphal, Knt., 14th Oct. at Halifax; 18th to sail for Bermuda.

Vestal, 26—Capt. W. Jonee, 30th Sept. arr. at Portsmouth from Milford; 1st Oct. docked, and taken out again in a few hours; 12th at Spithead; 20th sailed for the West Indies.—The Vestal is a vessel of Captain Symond's construction. She is a beautiful ship, and beats every thing she has come in contact with. She has a round stern, but so beautifully disguised as to have every appearance of a square one; her breadth is enormous compared with others of her class.

Victor, 18—Com. R. Russell, 4th Sept. at Trinidad.

Victory, 104—Adm. Sir T. Williams, G.C.B., Captain C. R. Williams, Portsmouth.

Viper, 6—Lieut. H. James, 12th Sept. in the Tagus.

Volage, 28—Capt. G. B. Martin, C. B. 1st Aug. left Malta for Nauplia.

Wasp, 18—Com. Jas. Burney, 11th October arrived at Lisbon; 28th to leave Lisbon for Bermuda.

Wolf, 18—Com. W Hamley, 20th April arr. at Sincapore from Malacca; 23d sailed for a cruise.

Commissioned.

Edinburgh, 74—1st November, at Portsmouth.
Jaseur, 18—11th Nov. at Sheerness.
Blonde, 46—Portsmouth.
Sparrowhawk, 18 — 18th November, at Portsmouth.
Rolla, 10—15th Nov. Plymouth.

Paid off.

Blanche, 46 — 2d November at Portsmouth.
Echo, St. V.—Woolwich.
Rattlesnake, 28 — 18th Nov. at Portsmouth.
Magpie, *Cutter*—Plymouth.

Varieties.

Dialogue between Captain Ross and Captain Humphreys.

(From the Leeds Mercury.)

Capt. Ross: I have been thinking, Humphreys, what Lord Melville, and Croker, and my old enemy, Barrow, will say to my discoveries. I have prepared despatches for the Admiralty at least ten times, sealed them firmly, and enclosed them in a small wooden box, in the hope that that might be found if I perished.

Capt. Humphreys: Lord Melville and Croker! why, man, they are out long since; don't you know Sir James Graham is First Lord now.

Capt. R. What Sir James Graham? Of course it is not the radical member for Cumberland, who makes the motions about sinecures.

Capt. H. The very same, and as stingy in office as he was snarling out. Even the King, though so fond of the service, can't stop his pruning and lopping.

Capt. R. The King! why I thought he preferred the army, and neglected the navy.

Capt. H. Ah! I forgot to tell you. Old George is gone. We've got William IV. now,—the Duke of Clarence that was.

Capt. R. Indeed! what sort of a king does he make? Is he a strict disciplinarian? I hope he has not infringed on the liberties of the people, nor ordered Brougham and Denman, who abused him so at the Queen's trial, to be strung up at the yard-arm? Why, what a horrible renegade Sir James Graham must be! I wonder the Duke would take him in.

Capt. H. The Duke! Brougham and Denman! Renegade! Strict disciplinarian! Ah, my good fellow, I see you are a thousand leagues out of your reckoning; we've changed the poles of the earth since you left us.

Capt. R. I hope you've not had a revolution.

Capt. H. Oh no, but we've had Reform.

Capt. R. What! has Lord John Russell carried his motion to give Members to Manchester, Leeds, and Birmingham? Did the Duke and Peel consent?

Capt. H. The Duke has been turned to the right-about three years since. Earl Grey and the Whigs are now in office.

Capt. R. Is it possible? Grey is a fine fellow, but rather proud of his order: however, you say reform is carried; how do Grey and the boroughmongers go on together?

Capt. H. Just as the dog Billy and the hundred rats did; he has worried them every one; there is no such thing as a boroughmonger in the kingdom—they are all gone to Davy's Locker.

Capt. R. Nonsense, you make game of me. Why, what has become of the Tory majorities of Parliament?

Capt. A. Reduced to a miserable minority in the Commons, and kept in decent order in the Lords. All the large towns have representatives; the rotton boroughs are annihilated. The King turned reformer, and then it was up with the Tories. The Reformed Parliament has emancipated the West India slaves, opened the China trade, and reformed the Irish Church.

Capt. R. What! why these are miracles! Pray have the Whigs found out a way to pay off the National Debt?

Capt. H. No, that and the North West passage will be discovered together.

Capt. R. But tell me, has the King forgiven Brougham and Denman?

Capt. H. Judge for yourself: the

first is a Lord, and keeps the King's conscience; the second is Lord Chief Justice of the King's Bench.

Capt. R. Good Humphreys, tell me next, do people walk on their hands or their feet now in England?

Capt. H. The fashion had not changed in that respect when I sailed; but what think you of their travelling at the rate of thirty knots an hour—a hundred people or so drawn by one engine?

Capt. R. Now, Humphreys, don't bounce; no tricks upon travellers; you at home are turning Munchausens now.

Capt. H. As I live, it's true; the Duke of Orleans went the other day from Liverpool to Manchester in an hour and five minutes.

Capt. R. The Duke of Orleans! I hope the French have not invaded us; yet old Charles X. must have hated the English Reform.

Capt. H. To be sure he did; he was running as fast as possible the other way, that is, towards pure despotism; so the French capsized him, and put his cousin the Duke of Orleans at the helm. They call him Louis Philip, and he makes a moderately good King, and keeps the French quiet, though the liberals say he does not go far enough. His daughter married Leopold.

Capt. R. Prince Leopold, you mean; do they live in England, then?

Capt. H. Prince Leopold! No, lack-a-day, one has to teach you the whole alphabet over again. King Leopold—King of Belgium; that is a new kingdom sprung up, separated from Holland; the Belgians did not like playing second fiddle to the Dutchmen, so they mutinied, and chose a Captain of their own, and they've got our Prince Leopold.

Capt. R. And what said the Holy Alliance to that?

Capt. H. Said! Why, Nic was beginning to be saucy, and talked of sending an army to France; but the Poles revolted, and it took a twelvemonth to lick them; they fought like lions, but what signifies, when they were surrounded by such a set of devils? At last Nic got them down, and then he cut their throats. As to Austria and Prussia, they did not like the look of things, as the Frenchmen were clearing for action, and calling all hands on deck. So they thought it better to sheer off.

Capt. R. Why, Humphreys, you stop my breath; I can't receive all this at once, and I fear you're bouncing, Humphreys, or else the world has turned topsy-turvy, whilst I have been locked up in ice these four years, almost as fast as a toad in a block of freestone. I thought if any body had climbed to the top of the tree in England, it would have been Huskisson.

Capt. H. Poor Huskisson, he's gone; he was run down by an engine at the opening of the Liverpool railway, and killed.

Capt. R. What? Oh! horrible! I am almost afraid to ask who is alive. But tell me, how is my old neighbour ———, and his daughter, a pretty little girl just left school.

Capt. H. Little girl! She is Mrs. ——, and has a fine boy a year old.

Capt. R. You don't say so: the chit. Well, I see the world's going on upon the old principles still; but every thing seems to be done quicker in England than it used to be. What is Walter Scott's last tale?

Capt. H. Ah! he has told his last; we have got to the *Finis;* the bright star has set. But I have news for you, the course of the Niger has been discovered.

Capt. R. The Niger? Who is the lucky man?

Capt. H. Two young chaps called Lander; one of them was the attendant of poor Clapperton. They are well-behaved steady lads, and they have done what so many fine fellows perished in attempting. They have traced the river to the Bight of Benin. One of them has gone out again; and it will be well if the dysentry does not catch him this time.

Capt. R. (sighing) I was not born under so fortunate a star. But I have done what man could do, and suffered more than most. Even Barrow will confess that.

Capt. H. Every body will confess it. Cheer up, man, you have solved the problem one way at least: you could not find a passage where there was none. Four winters in the ice is what no man ever endured before. The world will give you every credit for bravery, perseverance, and skill, not to be outdone.

Capt. R. Do you think so?

Rossiana.—Captain Ross since his return, as may be supposed, is quite a lion. He is, if not "the glass of fashion and the mould of form," at least "the observed of all observers;" and many are the mansions anxious to be honoured with the presence of the Polar hero. Like the Chinese in Goldsmith's "Citizen of the World," he is expected to say and do wonderful things—and great surprise has been occasioned by the fact of his acting much the same as he used to do. A certain dilettante dame hearing that the Captain had declared he considered an Arctic fox a dainty, actually got a cub from Leicestershire dressed for his dinner on a recent invite; and was quite astonished to see him work away at a haunch of venison instead.

"Pray, Captain Ross, (asked a city lady at dinner in Portland-place, the other evening,) did you not *take* any cold *out* in these inclement regions?" "No, madam, (replied Ross, who is a wag,) I *found* enough there on my arrival, I can assure you."

"Is it a fact (inquired Sir Clod) that the whales weep?" "Not that I know of!" answered the navigator. "Bless my soul, then, (replied the civic luminary), what do they mean by saying they have so much *blubber* about them?"

"I suppose (said Tom Macauley, cracking an old joke of ours), you used *icy*-coals for *cool*-inary purposes." "Yes (rejoined Ross); and, moreover, we had nothing else to drink." "That's odd enough (said Tom, rather smartly), for by all accounts you had plenty of *bruin* (brewing) out there." There is no *bear*ing Tom's fun. It was well known, that the expedition was fitted out at the expense of Felix Booth, the distiller, who was Sheriff at the period of Ross's departure. In compliment to his liberal patron, Ross called the land near the Pole, "Boothia." The chief of the natives discovered in that quarter he christened "Old Tom." The abor*gin*es Ross describes as being a *spirited* race in some instances, but generally speaking, dull; in fact, says he, "I never met a *rum* fellow amongst them."

"Pray (asked a parson), have they any religion or idea of the Deity?" "They have two (replied Ross); *Thaw-r* is worshipped in the summer, and *Ice-is* (Isis) in the winter.

"I should think an Esquimaux would make a capital assessor at an election," said Sam Rogers. "How so?" asked the Captain. "Why who are better judges of the *state* of the *Poles?*" answered Sam.

But, however, this is all mere *badinage.* Seriously speaking, Ross declares that the discoveries he is daily making of the altered state of affairs at home, quite exceed all he made at the North Pole. His recollection of the dreadful *icebergs* are quite obliterated by the contemplation of the changed state of the *Scotch burghs.* In fact, the remembrance of his woes and troubles in the dismal Arctic regions, he assures us, are lost in the feelings of horror with which he contemplates the awful changes in the character and constitution, political and economical, of England.

"The Esquimaux, (emphatically says the Captain), if the measures of the anarchists be persisted in, will be happier in his clime of cold and darkness, than the Englishman in this, his once boasted land of freedom and prosperity."

We believe him. The Captain has not gone "so far north" for nothing.—*Age.* [We don't.—Ed.]

Captain J. Hayes, C.B. is ordered to construct a frigate on his own system of ship building. She is to mount thirty-six 32 pounders, to have the same masts and yards as the Castor, to carry 300 men, and five months provisions under hatches, with 150 tons of water. She will be built at Portsmouth.—A three-decker to be named the Royal Frederick, and to mount 120 guns, is ordered to be laid down at Portsmouth yard. She will be one foot shorter, and four feet more beam than the Neptune. Her extreme breadth is to be sixty feet.—*Devon. Tel.*

Island in the Mediterranean.—In our number for January, at page 2, we inserted the account of an island discovered by Lieut. Baldock, R.N., on the coast of Africa, in the Mediterranean. We had not then an opportunity of consulting the chart; but having done so, it is evident that Lieut. Baldock has made an error in the latitude of it, if not in the longitude. The existence of the island itself has been doubted by Captain Belcher, R.N.; but we cannot imagine that such a report could have been made by Lieut. Baldock without a good reason for it. We merely allude to this at present, proposing to consider it more fully in an early number, and shall be thankful in the mean time to any of our readers for information concerning it.

The subjoined list of the ships now in the active service of Mahomet Pacha of Egypt, will shew what activity he has evinced since the battle of Navarino, in 1827, and even in March, 1828, when the Galatea was at Alexandria, not one of the large ships was even in preparation for building:—

Alexandria, May 22, 1833.—I send this list of the Pacha's fleet, as I thought it might interest you.—The advancement this great man has made towards improvement in Egypt is really wonderful; three-deckers are built and sent to sea in nine months; men are made seamen of, who never saw the sea, before; but as every thing is in its infancy, it is not uncommon to hear of a line-of-battle ship having been on her beam ends. The Pacha sails in twenty days for Candia, to inspect the harbour of Ceuta, to form a port or arsenal for his large ships, as they can never pass in or out of this harbour, without taking out all the line-of-battle ship's guns, and those of the upper deck of double-banked frigates. The deepest channel is only twenty-two feet water.

ShipsNames	*Guns*	*Men*	*Captains*	
Musr (Cow)	138	1500	Besson	For the flag of Osman Pacha.
Acre	138	1500		Bringing forward for the flag of Mullus Bey.
Mahallet el Keber	100	1200	Houssard (French)	
Mansoura (Victory)	100	1200	Pressick (English)	
Alexandria	96	1200	Mahmoud.	
Aboukir	90	1000	Hussein.	

The above ships of the line were all built in Alexandria, and carry French long 30-pounders on the gun decks, and 30-pounder carronades on the spar deck, the two first named ships are 3,800 tons, the next 3,000, the ninety about 2500.

				Built at	*Tons*
Jaffaiur	62	600	Achmet	Genoa	1800
Bahira	60	550	Canadine	Marseilles	1600
Kafpecheyk	58	550	Austapha	Archangel	1700
Raschid	58	550	Selim	Venice	1700
Sheergahaat	54	500	Mohamet	Genoa	1400
Damietta	52	500	Osman	Alexandia	1400
Mufti Ghaut	48	500	Hemmen	Algiers	1400
Tanta	22	353		Alexandria	700
Pelenga Ghaut	20	280	Pourshid	Marseilles	600
Fouch	20	280		Adalia	
Genno Baham	22	280			
Corvette	22	280			
Psyche	22	200	Abdallah	Genoa	Brig
Satalia	20	200	Osman	Adalia	
Washington	18	150	Feigalla	America	
Seminde Ghaut	18	150		Rhodes	
Chaba Ghaut	18	150		Marseilles	
Bidi Ghaut	10	150			

Three other brigs from 14 to 10 guns, names unknown, and a cutter, four fire ships, and about thirty sail of navy transports, from 600 to 300 tons burthen, at present employed collecting timber and masts for the arsenal. *Building*—Belgian, 100; Homs, 100; Koniah, 100.

Hants Tel.

PROMOTIONS AND APPOINTMENTS.

PROMOTIONS.

Retired Rear-Admiral—H. Garret.

Captains—Lord G. Paulett; P. D. Hay.

APPOINTMENTS.

ÆTNA, 6, *Surv. Ves.—Surg.* D. Williams; *Assist. Surg.* A. C. H. Threshie, M.D.

ANDROMACHE, 28—*Purser*, E. Huggins.

BLONDE, 46—*Capt.* F. Mason, C.B.; *Lieuts.* Hon. D.W. Pelham, T. Carpenter, W. M'Lean, S. Poyntz, G. W. C. Lydiard; *Surg.* J. Houstoun; *Purser*, B. Soden; *Assist. Surg.* H. Morris; *Chaplain*, Rev. A. Watson; *2d Lieuts. Mar.* T. Fraser, J. T. T. M'Carthy; *Sec. Mast.* G. Beddecombe; *Mates*, J. Palmer, Hon. C. Ashley; *Mids.* S. S. Durnford, C. D. A. Pascoe, E. Fitzgerald: *Clerk*, W. Dring.

BRITANNIA, 120—*Surg.* J. Irvine, M.D.; *Clerk*, V. D. Hall; *Lieut.* W. Lewis.

CORDELIA, 10—*Surg.* W. Idington, M.D.

CONFIANCE, St. V.—*Assist. Surg.* J. Chalmers.

CRUIZER, 18—*Lieut. Com.* C. Fitzgerald.

DEE, St. V.—*Com.* E. Stanley; *Surg.* T. M'Donald.

EDINBURGH, 74—*Capt.* J. R. Dacres; *Com.* W. P. Stanley; *Lieuts.* L. T. Jones, J. M. C. Airey, H. B. Young, F. Blair, A. Wakefield, E. J. Bird; *Master*, G. Parsons; *Sec. Mast.* G. H. Harper; *Master's Assists.* S. Waddington, T. Crout, C. Triphook, G. T. Briggs; *Purser*, R. Bromley; *Chaplains*, A. H. Small, E. Kitson; *Surg.* W. A. Bates; *Capt. Mar.* T. Quested; *Lieuts. Mar.* T. D. Fusbroke; *Assist. Surgs.* W. P. Dolling, J. R. Dunn; *Mids.* E. B. P. Von Donop, J. Brobut, C. W. Hallett, G. Moyle, D. Sinclair, W. E. A. Gordon, H. A. Norman; *Clerk*, R. Marsden.

EXCELLENT, 74—*Lieut.* J. B. Driffield; *Mates*, E. Kennedy, H. Mann, G. B. Dewes; *Clerk*, E. Rowe.

JASEUR, 18—*Com.* J. Hackett; *Lieut.* D. B. Bedford; *Purser*, W. Morton; *Assist. Surg.* A. Browning.

JUPITER, 30—*Boatsw.* S. Boyle.

LEVERET, 10—*Lieut.* G. Traill.

LYNX, 10—*Second Master*, H. Miller; *Clerk*, E. Thornton.

MADAGASCAR, 46—*Assistant Surgeon*, D. Kerr.

MALTA HOSPITAL—*Dispenser*, J. Whitmarsh.

MARY, TRANSPORT—*Lieut.* P. Hay.

MELVILLE, 74—*Com.* E. Yonge.

OCEAN, 80—*Master*, M. Bradshaw.

ORESTES, 18—*Mate*, R. Jenner.

PHŒNIX, St. V.—*Com.* R. Oliver; *Lieuts.* G. W. Smith, J. E. Smith; *Master*, W. Wheeler; *Purser*, J. Chimmo; *Surg.* A. Neill.

RINGDOVE, 16—*Lieut. Com.* F. W. Lapidge.

RODNEY, 74—*Com.* Morgan.

ROLLA, 10—*Lieut.* H. H. Glasse; *Assist. Surg.* J. Andrew; *Sec. Mas.* T. Hart; *Clerk*, W. Hemer.

ROMNEY, 30—*Com.* J. Wood; *Carpr.* T. Barnard.

ST. VINCENT, 120—*Surg.* A. Sinclair.

SAVAGE, 10—*Mate*, C. G. C. Patey.

SPARROWHAWK, 18—*Com.* C. Pearson; *Lieuts.* T. F. Harmer, J. Town, E. T. Harries; *Surg.* J. Rankin; *Assistant Surgeon* S. Allen.

SPEEDY, 8—*Lieut. Com.* T. Henderson.

SYLVIA, *Transp.—Lieut.* A. Howe.

TALAVERA, 74—*Mid.* C. M. Luckraft.

THUNDERER, 84—*Com.* J. Parson; *Lieuts.* A. C. Dawson, R. H. Bimbury, J. A. Abbot, E. J. Bird; *Capt. Mar.* R. Gordon; *Sec. Lieuts.* H. F. Muston, H. Arnold, C. C. Hewitt; *Surg.* J. Dickson; *Assist. Surg.* J. Moody; *Mids.* E. K. Barnard, E. Marshall, P. A. Scott, G. Pigot, E. T. Fuge, C. W. Carroll, J. Simpson; *Clerk*, C. F. Stevens.

VERNON, 50—*Lieut.* C. W. Pears.

VICTORY, 104—*Com.* J. C. Ross; *Master Assist.* J. Garner; *Clerk*, A. B. Lash; *Assist. Surgs.* J. C. Sabben, J. Kittle, J. Rogers.

Midshipmen passed for Lieutenants.

Seamanship—A. H. Read, of *Blonde*.

College—J. Astle, of *Blonde*; T. Baillie, of *Favourite*; E. P. Von Donop, and G. A. Elerman, of *Edinburgh*; R. Jenner, of *Orestes*; Kersim Abdul Effendi, (Egyptian Officer,) of *Favourite*; F. W. Mereweather, of *Edinburgh*; A. H. Reid, of *Blonde*; W. N. Russel, of *Favourite*; B. Sharpe, of *Magpie*; R. Synge, of *San Josef*; W. S. Wiseman, of *Rattlesnake*; B. A. Wake, of *San Josef*.

NEW MERCHANT VESSELS. FROM LLOYD'S REGISTER FOR 1833.

Reported to 20th November.

VESSELS.	RIG.	WHERE BUILT	TONS.
Adelaide	Schooner	Brixham	85
Atalanta	Smack	Aberystwith	34
Azores Packet	Schooner	Scilly	59
Amelia Thompson	Ship	Sunderland	477
Charlotte	Smack	Cowes	43
Dover Castle	Schooner	Shoreham	108
Dunnotter Castle	Snow	Aberdeen	165
Egfried	Schooner	Sunderland	257
El Balier	Steam Packet	Liverpool	140
Elizabeth	Sloop	London	33

Reported to 20th November.

VESSELS.	RIG.	WHERE BUILT	TONS.
Fama	Barque	Limekilns	218
Hannah	Schooner	Cork	112
Idas	Smack	Cowes	75
James Brook	Snow	Selby	163
John Crosbie	Schooner	Grangemouth	74
Madona	Brig	Greenock	213
Maria	Barque	Dumbarton	280
Morton	Schooner	Biddeford	82
Pilot	Schooner	Dundee	81
Palinurus	Barque	Whitby	300
Rapid	Schooner	Ipswich	136
Rosetta	Schooner	Newcastle	163
Silwina	Schooner	Scilly	59
Verdant	Brig	Dundee	175

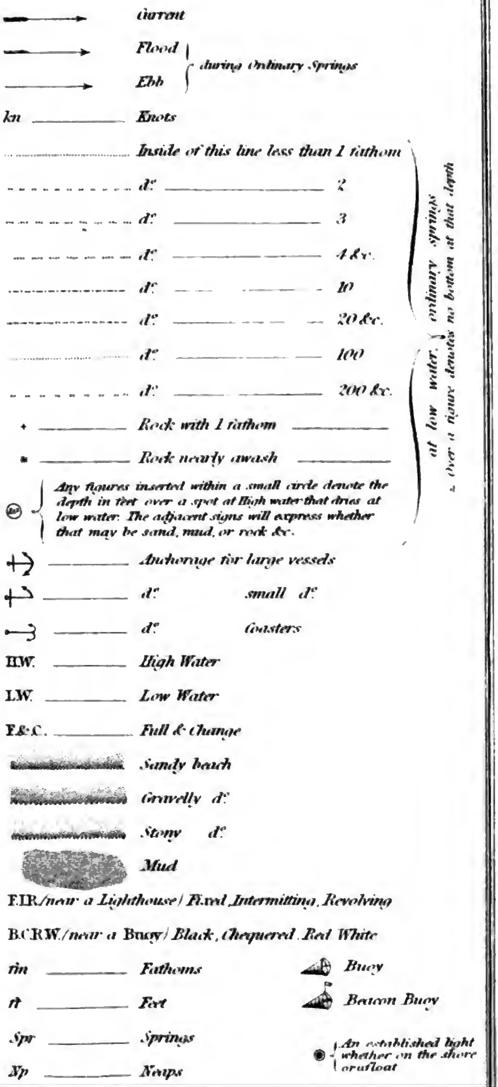
WRECKS OF BRITISH SHIPPING—FROM LLOYD'S LISTS, 1833.

Continued from page 686.

VESSELS' NAMES.	MASTERS' NAMES.	WHERE FROM.	WHERE TO.	WHERE WRECKED.	WHEN	PARTICULARS.
611 Active	Prowse	Heath	Dartmouth	Stag Rocks	9 Nov.	Crew saved.
612 Active	Of South	Shields		Off Tory Isl.	20 Oct.	Reported.
613 Agenoria	Buchanan	Ross	Miramichi	Pr. Ed. Island	10 Sept.	Total.
614 Albion	Of Goole			Blakeney	3 Nov.	Crew drowned.
615 Ann	Dwyer	Newfndld.		Funchal	12 Nov.	Supposed.
616 Blagdon	Of Newcast	Virginia	Leith	At Sea	28 Sept.	Foundered, crew sd.
617 Britannia	Oldis	Bordeaux	Mauritius	Off Amber I.	4 July	Crew saved.
618 Canning	Jameson	Newry	S. Petersbrg	Packora	20 Oct.	Crew saved.
619 Caroline	Davy	Sunderland	Shoreham	Off Cromer	Nov.	Abandoned.
620 Ceres				Kilnsey		Crew saved.
621 Chatham	Young	Newfndld.	Poole	At Sea	19 Oct.	Abandoned.
622 Comely	Straton	Dundee	Riga	Bornholm	2 Nov.	Total, crew saved.
623 Countess of Stair	Supposed to	be wrecked	near	Port Gordon	Oct.	
624 Cupid	Price	Colchester	Quebec	Bks. Newfdld	2 Sept.	Abandoned.
625 Delight		Archangel	Dublin	Flotter Island	Nov.	
626 Doris	Turnbeck	Sunderland	Rotterdam	At Sea	Nov.	Abandoned.
627 Dragon	Of Hobart	Town	Whaler	Supposed	June	
628 Elizabeth	Brown	Of London		Pacific	Lately	
629 Esther	Falle	Petersburg	Jersey	Elsinore	16 Nov.	
630 Evergreen	Coskill	Liverpool	B. Ayres	G. Costellos	6 Aug.	
631 Fame	Potter	Alloa	London	Nevison R.	31 Oct.	
632 Fanny	Marshall	Bordeaux	Dunkirk	Dover Roads	15 Oct.	Sunk.
633 Flamingo	Lingard			Nr. Simon'sB	16 Aug.	By Fire.
634 Friends	Of Wick			Peterhead	7 Nov.	
635 Galatea	Thornton	Newcastle	London	Whiting S.	17 Oct.	Crew saved.
636 George	Tell	St. David's	Dordt	Hinder Bay	Oct.	Crew saved.
637 Good Agreement				Off StPaul'sI.	16 Oct.	Two saved.
638 Hero	Watson	Dublin	London	Isle Wight	21 Oct.	Two drowned.
639 James and Martha	Robson	Not heard	of since		22 Sept.	Whitehaven to Wigtown.
640 James and Margaret	Young	Newcastle	Schiedam	At Sea	23 Oct.	Foundered, cw. svd.
641 Janet	Walls	Of Inver-	keithing	Kinghorn	17 Oct.	Sunk.
642 John & Mary		Dundalk	Newport	Barry I.	7 Nov.	Crew saved.
643 Lancaster	Of White-	haven		At Sea	3 Oct.	Seen abandoned.
644 Lark	Thompson	Hambro'	Hull	Not heard of	since	28th Aug.
645 Lizard	Begg	Sunderland	Bridport	Goree	Nov.	Crew saved.
646 Lord Fife	Hughson	Lerwick	London	Buxey Sand	21 Oct.	Crew saved.
647 Margaret	Brown	Of Rothsay		Ayr	2 Nov.	Crew drowned.
648 Mary Bud	Walker	Sunderland	Aldboro'	At Sea	2 Nov.	Abandoned.
649 Mary	Heselton	Fowey	Newcastle	At Sea	Nov.	Abandoned.
650 Mary & Wm.	Of Milford	is sunk near		Abercastle	30 Oct.	
651 Matilda	Case	SierraLeon.	London	St. Louis, Sen	Aug.	Crew saved.
652 Matilda	Jackson	Newcastle	Londonder.	Sd. of Sanda	5 Nov.	Cargo part saved.
653 Neptunus	Malmen			Pothleven	26 Oct.	Crew drowned.
654 New Helen	Killan	Whitehavn.	Killough	Harrington	13 Oct.	Total.
655 Ocean	Howlett	Not heard	of since		28 Aug.	
656 Paragon	Wilson	Stockton	London	Nore	4 Nov.	By fire.
657 Powerful	Maldrame	Topsham	Sunderland	Yarmouth	3 Nov.	By fire.
658 Qn. Charlotte	Of Sydney	Whaler	Supposed	lost	June	
659 Rebecca	Booth	Berwick	London	Galloper	17 Oct.	Crew saved.
660 Resolution	Smith	Newcastle		Nr. Dudgeon	1 Nov.	Abandoned.
661 Rob Roy	Smith	Waterford	London	Creden Head	24 Oct.	Crew saved.
662 Romulus	Baker	Stockton	Rotterdam	Voorne	5 Nov.	Crew saved.
663 Rose of Sharon	Wallace	Newcastle	Grimsby	Spurn Pt.	5 Nov.	Crew saved.
664 Rose		Boston	London	Wells	5 Nov.	Sunk at her anchor.
665 St. Andrew	M'Beath	Perth	London	Nore	4 Nov.	Run down.
666 St. Vincent	Grindle	Liverpool	Africa	Bonny R.	16 Aug.	
667 Sarah	Hoxer	Newcastle	Yarmouth	Holland C.	12 Nov.	Crew saved, sunk.
668 Sarah	Armitage	Spalding	Goole	Off Humber	5 Nov.	Crew saved.
669 Sarah Margaret	M'Kenzie	StJohn. N B		Galway	20 Oct.	Reported totally lst.
670 Sheffield		Wisbeach	London			
671 Staff of Life		Cork	Liverpool	Carnarvon	3 Nov.	Crew drowned.
672 Tees	Gill	Sunderland	Rotterdam	Hinder	6 Nov.	Crew saved.
673 Tinker	Moorice		Orkney	Grimsholm	14 Oct.	Crew saved.
674 Traveller	Stewart	Sunderland	Hambro'	Vogel	3 Nov.	2 of crew drowned.
675 Unknown	A sloop	foundered	off the	Humber	2 Nov.	
676 Wear	Hasketh	Sunderland	Dordt	Hinder	19 Oct.	Crew saved.
677 William Pitt			Hull	Narva	Lately	
678 William Thompson	Wright	Tarragona	Rio Janeiro	Off Taragona	Sept.	All drowned.
679 Witham	Middlemas			Skipsea	17 Oct.	
680 Zephyr	Cox	Riga	Bridport	Off Goree	Nov.	Crew saved.

ABBREVIATIONS adopted for the PLANS & CHARTS of this WORK

b	*blue*
bk	*black*
br	*brown*
brk	*broken*
c	*coarse*
ch	*chalk*
cl	*clay*
crl	*coral*
d	*dark*
f	*fine*
g	*gravel*
gn	*green*
gy	*grey*
grd	*ground*
h	*hard*
m	*mud*
oz	*ooze*
oy	*oysters*
p	*pale*
r	*rocky*
rd	*red*
rot	*rotten*
s	*sand*
sf	*soft*
sh	*shells*
sm	*small*
sp	*speckled*
st	*stones*
stf	*stiff*
w	*white*
wd	*weeds*
y	*yellow*



Current

Flood } *during Ordinary Springs*

Ebb

kn ——— *Knots*

Inside of this line less than 1 fathom

d° ——— *2*

d° ——— *3*

d° ——— *4 &c.*

d° ——— *10*

d° ——— *20 &c.*

d° ——— *100*

d° ——— *200 &c.*

+ ——— *Rock with 1 fathom* ———

✱ ——— *Rock nearly awash* ———

at low water, ordinary springs

Over a figure denotes no bottom at that depth

Any figures inserted within a small circle denote the depth in feet over a spot at High water that dries at low water. The adjacent signs will express whether that may be sand, mud, or rock &c.

——— *Anchorage for large vessels*

——— *d°* *small d°*

——— *d°* *Coasters*

H.W. ——— *High Water*

L.W. ——— *Low Water*

F.&C. ——— *Full & Change*

Sandy beach

Gravelly d°

Stony d°

Mud

F.I.R. */near a Lighthouse/ Fixed, Intermitting, Revolving*

B.C.R.W. */near a* Buoy*/ Black, Chequered, Red, White*

fm ——— *Fathoms*

ft ——— *Feet*

Spr ——— *Springs*

Np ——— *Neaps*

Buoy

Beacon Buoy

● *An established light whether on the shore or afloat*

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FURTHER PARTICULARS OF WRECKS.

Neptunus.—This vessel belonged toWisby, and is supposed to have been laden with salt, besides a few boxes of lemons and pomegranates. It was expected that only a small portion of them would be saved.

Countess of Stair.—A boat belonging to her was found, and the master (dead) lashed to the seat, with the vessel's papers tied round his body.

Elizabeth, Brown, Master.—This vessel was wrecked on a shoal in lat. 29½° S., long. 158½° E. Supposed to have occurred twenty months ago, on a voyage from New-Zealand to Sydney.

William Thompson.—This vessel is reported by the *Barkly*, from Zante, to have capsized off Taragona.

Active.—Of South Shields. Seen full of water, with her foremast only standing, on 20th October.

Chatham.—The master and six of her crew were drowned; the remainder, picked up by the Eagle, arrived at Miramichi.

Ann, Dwyer.—This vessel drove from her anchorage on board H.M.S. Belvidera, and received so much damage, that no one doubts her having foundered almost immediately after getting clear, and the crew leaving her. Her hatches had not been opened, as she had been only a day or two in the roads, and the weather unfavourable.

Active.—Struck on the Stag rocks off the Lizard, and sunk.

Ocean, Howlett.—This vessel sailed from Christiansand 28th August, and has not since been heard of.

Captain Manby's small and portable apparatus for extinguishing fire was tried on the morning of the 19th, in the dock-yard, in the presence of Admirals Sir T. Williams, and Sir F. Maitland, and Mr. Peake, the master shipwright, with several other officers and scientific persons. It was compared, as to its power of extinguishing fire, with one of the best dock-yard fire-engines, The apparatus consists simply of a copper barrel, about 2 feet 6 inches long, and perhaps 9 or 10 inches in diameter. This barrel is partly filled with a certain fluid, and then a pipe is inserted at a hole in the upper part, which extends nearly to the bottom. A small apparatus for the purpose of condensing air, which is worked by the hand, is then screwed on the top, and as much air forced into the barrel as is possible; the stop-cock is then turned, the condensing apparatus is removed, and a nozel screwed on. The action of the machine is of course easily understood, viz. the fluid is forced out of the barrel, through the long pipe, by the elastic force of the condensed air. The machine being thus charged, may be kept in this state for any length of time, continually ready for use. The experiment was conducted as follows; an old sentry box, partly filled with combustibles, was elevated on trussels, and set fire to; when the fire had reached a certain height, the machine was slung over the shoulder of a man, and presented towards the fire, and the stop-cock turned, by which a continued stream of fluid was thrown on the fire, which was thus very soon extinguished. The fire was again allowed to reach about the same height as before, and extinguished by means of the ordinary fire-engine.

This was repeated two or three times, and the result was highly satisfactory as to the advantage of Captain Manby's apparatus. A very small stream of this fluid produced the same effect in extinguishing fire, in nearly as little time as a very large jet of water from a superior fire-engine. The advantage of having an apparatus of this kind on board ship is manifest. It is always ready for use, easily portable—in fact a man can carry it under his arm to any part of the ship—and if a fire be not immediately extinguished by it, at least it would be well kept under till the ordinary fire-engine could be brought. We congratulate Captain Manby upon the complete success of the experiment, and we would recommend the introduction of this machine on board ships of all kind. It would also be of great service in warehouses, and in country residences, which are far removed from places where fire-engines are kept. We believe the apparatus is not expensive. The fluid which is used is a strong solntion of American pearl-ash.

Portsmouth Herald.

Births.

On the 15th Nov., at 27, Montague-square, the lady of Captain Rose-Henry Fuller, R.N., of a son.

At Langstone, the lady of C. A. Andrews, Esq. R.N., of a daughter.

At Flushing, the lady of Lieut. Forster, Commander of H.M. brig Lapwing, of a daughter.

On 16th Oct., at Torpoint, the lady of Capt. Rodney Shannon, R.N., of a daughter.

At Newport, near Barnstaple, the lady of John-Gibbs Bird, Lieutenant, R. N., of a daughter.

At Dedham, the lady of Captain Wormley, R.N., of a son.

Marriages.

At Marylebone church, Capt. J. T. Talbot, R.N., to Christian, daughter of the late William Kidd, Esq.

At Lamesley chapel, in the county of Durham, Captain Yorke, R. N. and M. P. for Cambridgeshire, to the Honorable Susan Liddell.

At Sidmouth, by the Rev. Wm. Bernard, Commander Alfred Matthews, R. N., third surviving son of the late John Matthews, Esq., of Belmont, in the county of Hereford, to Emily-Rosetta, youngest daughter of the late Rev. James Bernard, of Sidmouth.

Deaths.

Death of Admiral Sir Herbert Sawyer, K.C.B.—This gallant officer departed this life on the 13th Nov., at Bath, where he had been residing since he left this neighbourhood, to which he was much attached, in consequence of the health of Lady Sawyer. He was the son of Admiral Sir Herbert Sawyer, and served under his father during the war with our Transatlantic Colonies, at the conclusion of which he was in the command of the Porcupine sloop, at Jamaica. He was made Post-Captain in the early part of the year 1709, and in the following year appointed to the Pegasus, 28, on the Newfoundland station. In 1793, when the war with France commenced, he commanded the Amphion frigate, from which he was subsequently removed (1795) to the Nassau, of 64 guns, and cruized with the North Sea Fleet till 1797, when he was appointed to the Saturn, 74, attached to the Western squadron. In 1799 he succeeded Sir Henry Trollope in the Russel, which he continued to command until the spring of 1801, when he joined the Juste, of 80 guns, and accompanied Sir Robert Calder to the West Indies. On his return to this country, he was appointed to superintend the payment of ships at this port, and which appointment he held until promoted to the rank of Rear-Admiral, October 2, 1807. In the early part of 1810, Sir Herbert Sawyer was appointed second in command at Portsmouth, and in the latter part of the same year was promoted to the rank of Vice-Admiral, and appointed Commander-in-Chief on the Halifax station, which he held until 1813; and when about to leave that station was presented with an address from the consul, merchants, and inhabitants, thanking him for his gallant and unceasing exertions in the protection of the colonies from the attacks of the Americans. In the same year he hoisted his flag as Commander-in-Chief at Cork; and on the 2d of January, 1815, was nominated a K.C.B. At the time of his death, Sir H. S. was an Admiral of the White, to which he was promoted in 1825.—*Plymouth Herald.*

On the 31st Oct., Commander Charles Bentham, R.N. third son of the late Lieut.-General Bentham, Royal Artillery.

On the 30th Oct., at Trowbridge, Wilts, Lieut. Thomas Linthorne, R.N.

Lately, in Ireland, Mr. W. Armstrong, Surgeon, R.N.

On the 7th of November, at his residence, Woburn Farm, near Chertsey, Vice-Admiral Charles Sterling, in the 74th year of his age.

At Edinburgh, on the 31st of October, in his 22d year, the Hon. Charles-Henry Murray, Royal Navy, third brother of the late Lord Elibank.

At Naas, county of Kildare, Ireland, of cholera, after an illness of only ten hours, in the 61st year of his age, Captain Benjamin, eldest brother of Captain Charles Carter, R.N. Captain Carter was an officer of high professional attainments, an elevee of the late Lord Bridport, and advanced by that distinguished Nobleman, while in command of the Channel Fleet, to the several grades of Lieutenant, Commander, and Post rank—seniority 29th April, 1802.

On the 8th of November, at Paigntoe, William-Harry Hooper, Esq., Purser, Royal Navy, (1815,) Secretary at Greenwich Hospital.

On the 15th of November, Lieut. Charles Dow, R.N.

At Newfoundland, Lieut. John Bulger, R.N., (1814,) aged 39.

On the 23d of October, at Eaton-grove, Norwich, much regretted, Captain Joseph Barwick, Royal Navy, in his 69th year. He was one of the few remaining companions of his present Majesty in the glorious victory off Camperdown.

At Woolwich, on the 13th of November, Captain Robert Pettet, Royal Navy, aged 67 years.

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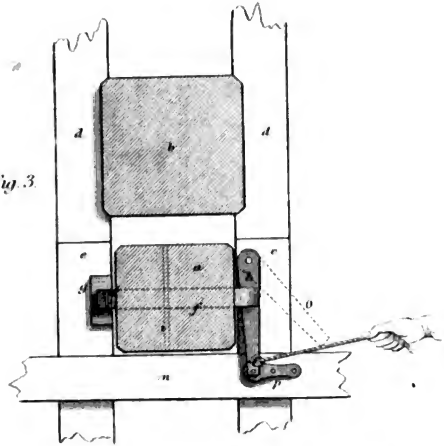
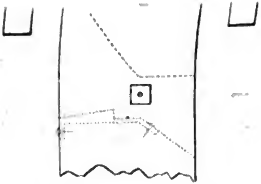
Fig. 3.





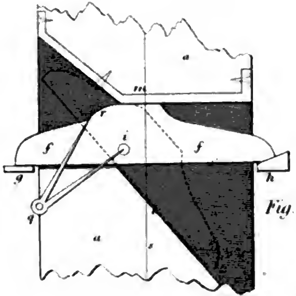


Fig. 1

E. Turrell Sc.

Published for the Proprietors of the Nautical Magazine

Supplement

TO THE

NAUTICAL MAGAZINE,

&c.

DECEMBER, 1833.

VI.—Blake's Patent Pivot Fid, *for Topmasts, Running Bowsprits, Jib-booms, &c.*

To the Editor of the Nautical Magazine.

Sir—Much ingenuity has been displayed in a variety of inventions to improve the fid. The object has been to facilitate the striking of the topmast, which fully proves the usefulness, and indeed necessity, of endeavouring to establish a permanent plan for this important purpose. The efficiency of my fid, and the economy in its application, renders it desirable for the mercantile service, as well as the navy; and it is applicable not only to topmasts, but to running bowsprits and jib-booms. The following is a description of the figures in the accompanying plate:—

Fig. 1. *a a*, is a part of the section of the topmast; the part shaded black is the fid-hole or mortise: *f* is the fid: *i* is the pin or pivot which supports it in the fid-hole, and on which it turns: *m* is the fid-plate, the angular point of which is placed exactly over the centre of the pivot *i*: *g* is a fixed bearing plate on the trestle-tree, (or chock on the trestle-tree, as the case may be; these chocks are shewn on each side by the letters *e e*, figs. 2 and 3:) *h* is a moveable bearing plate on the opposite side. These two plates the fid, *f*, will bear upon. It will be observed, that the moveable plate, *h*, is formed with an inclined plane, and the end of the fid, bearing on it, is cut to a corresponding inclination, the object of which is, to facilitate the removal of the moveable plate, *h*, when it is required to strike the topmast. The compasses, *q*, are placed to shew the mode of obtaining the arc, *r*: the distance from the centre of the pin, *i*, to the underside of the fid-plate, *m*, in a perpendicular direction, must be ascertained, and will be the radius for the arc, *r*. This sweep, or curve-line, *r*, is intended to extend sufficiently near the lower part of the fid to enable it to swivel without interruption, and take the position it will require to be in when the topmast is lowered or raised, as described by the broken lines, *l*.

Now, it is evident that the pin or pivot, *i*, being on one side of the centre line, *s m*, if the topmast be raised so as to lift the ends of the fid sufficiently above the bearing-plates, *g*, *h*, the end of the fid farthest from the pin or pivot will drop, and the other end will rise, till the whole fid is brought within the fid-hole, and assumes the position shewn by the broken lines, *l*, in this figure; and the topmast may then be lowered or raised at pleasure without impediment. But, as it is very important that sailors should possess the power of lowering the topmast, without first slackening the rigging, for the purpose of raising the fid from its bearings, a contrivance for this purpose has been adopted.

Fig. 2 represents a front elevation of a part of the masthead, and heel or lower part of the topmast; and I here beg to state, that similar letters of reference are used to denote similar parts in *figures* 1, 2, and 3. I shall therefore only deem it necessary particularly to describe the part marked *k*, in this figure, which is, in fact, simply a groove cut in the inner part of the trestle-tree, (or, in part, in the chock on the trestle-tree, as the case may be,) sufficient to allow the end of the fid, *f*, to fall into the position shewn by the broken lines, *l*, as soon as the bearing-plate, *h*, is removed, without the necessity of raising the topmast in the slightest degree.

As the weight of the topmast is sustained by the lining, or fid-plate, (which is intended to be very substantial,) bearing on the fid; and, as the part in contact on the upper part of the fid is not to be less in length than half the diameter of the topmast, and the thickness of the fid is the same as usual, the extent of the bearing surface in the middle of the spar will give all the requisite support. The pin, *i*, is intended for no other purpose than to keep the fid in place for self-acting, or for it to turn on.

Fig. 3 is a plan of the former figure: *a* the section of the topmast: *b* the head of the lower mast: *d d* the trestle-trees: *e e* the chocks fitted on the trestle-trees, (which chocks will often be required,) the upper side to be fair with the foremost cross-tree, *n*: *f* the fid: *g* a fixed plate, on which one end of the fid bears: *h* a moveable plate lying over the groove, (before noticed,) and turning on a pin or pivot a few inches abaft the fid, while at its foremost end is an eye to which a rope may be attached; and, in small craft, a strong pull on that rope will always be sufficient to remove the bearing-plate to the position shewn by the dotted lines, *o*, which will allow the fid to disengage itself from the opposite bearing-plate, as before explained.

In large vessels, from the great pressure, the inclined plane on the surface of the moveable plate, *h*, shewn by *fig*. 1, on which the fid rests, must be resorted to, for the purpose therein stated. A safety pawl will be required at the foremost end of the moveable plate, as shewn in this figure, which of course must be removed, before the end of the moveable plate, *h*, is acted on. But, perhaps, for merchant ships in particular, a jaw-cleat might be preferred for the purpose, with a pin passing through it and the outer end of the moveable plate, or the pin may be placed without the plate, whichever may be thought most convenient. If the jaw be made to project beyond the plate, an extra hole or two might be introduced to receive the pin, which pin might be made, by removal, a fresh fulcrum for a lever or crow-bar to act on the end of the moveable plate, *h*, with greater effect, to give it a first start.

Figures 4 and 5 are illustrative of the application of this principle to the running bowsprit of a cutter :—

Fig. 4 represents the front elevation of the bowsprit-bitts, &c. : *a a* the bitts : *b b* the knees to ditto : *c* the chock on which the bowsprit bears : *d* the roller : *e* the section of the heel of the bowsprit : *f* the fid : *g* the pin or pivot on which the fid turns—this pin need only run just below the fid, and is to be pointed and fitted with a shoulder and small eye or ring above, for the convenience of shifting it with the fid from one reef mortise to the other : *h* the moveable plate, under which is a groove, for the purpose as described, for the topmast : *i* is a fixed plate : the two plates, *h*, *i*, the fid bears against. It might be observed, that the upper end of the plate, *h*, is intended to traverse between the bitt and a piece of iron, made in the form of a staple, the ends embracing the sides of the bitt ; a hole is formed in front, to receive a pin which secures the moveable plate ; this pin, of course, must be removed before the end is acted on by the pull-rope, which will be better understood by referring to the figures.

Fig. 5 represents a plan of *fig*. 4, the reference letters denoting similar parts in each : the bowsprit may be either fitted with a separate fid in each reef mortise, or have a moveable fid applicable to all. In the latter case, perhaps a shoulder or stop in the fid and fid-plate, as shewn in this figure, may be found convenient, but will be attended with a little additional expense in smith's labour.

The foregoing particulars will illustrate the invention. Its simplicity, combined with safety and economy, will be found one of its principal advantages. Another obvious benefit, is that of the fid being fixed to the spar with which it is to be used. The weight to the masthead is about the same as the common iron fid. Its cost is very inconsiderable; and models of the plan may be seen at the Gallery of Practical Science, Adelaide-street; or at the Union Dock, Limehouse; or on application to Mr. Hardie, 13, St. Swithin's-lane, Lombard-street.

I am, Sir, &c.,
W. Blake.

VII.—Pearce's Screw Fid.

We have already given our readers a description[*] of this fid, and have recorded the opinion[†] of Lieut. Bird Allen on its merits; and as we consider it one of our duties to promote useful inventions all in our power, we have much pleasure in laying before our readers the following extract of a letter from the master of H.M.S. Thunder, on board which ship, at our suggestion, it has been fitted. Those of our readers who are acquainted with the screw fid of Sir R. Seppings will see that it differs from his.

"H.M. Surveying Ship Thunder, Duncrary River, 15th Oct., 1833.

"Having, with much attention, narrowly inspected the screw fids fitted in May last on board H.M. ship at Chatham, also, the practical utility of them which has come under our observation, I have much pleasure in stating, that they have fully merited my (and I believe I may with truth add, ALL our) commendations; and, from their simplicity, being most decidedly superior to any others that I have seen.

"Edward Dunsterville, Master, H.M.S. Thunder."

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[*] No 16, p. 333.

[†] No. 17, p. 416.

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ERRATA.

Page.	Line.	
22	14	For "2,500" read "25,000."
23	13	For "was," read "were."
24	18	For "Rdeau," read "Rideau."
28	3	From bottom, for "forbidden," read "forbidding."
58	3	From bottom, for "11° 26′ W." read "11° 26′ E."
61	24	For "N. b. E. ¾ E." read "N. b. E. ⅜ E."
113	12	From bottom, *dele* "not."
114	5	For "where," read "when."
—	17	For "direction," read "duration."
116	18	For "N.N.E." read "N.E."
—	36	For "clear," read "open."
—	47	For "work," read "warp."
117	15	For "Arnoudkeni," read "Arnoudkevi."
—	28	ditto ditto.
—	34	For "Ortakeni," read "Ortakevi."
118	1	ditto ditto.
—	5—11.	For "Arnoudkeni," read "Arnoudkevi."
—	13	*Dele*, "which will soon be opened. In sailing along the wharf."
119	22	For "southernmost," read "outermost."
120	10	For "fathoms," read "feet."
135	6	Colonial wheat, for "to come in *free* only when the average is above 60s.," read "to come in at 6d. duty per quarter, when the average is above 67s."
150	42	For "sure," read "mere."
162	23	For "twenty-one," read "twenty-five."
163	3	For "Sir Charles Hamilton," read "Sir Charles Douglas."
179	21	For "northerly," read "N.E."
180	11	For "currents," read "current."
181	12	After "W.S.W." insert "20′."
—	22	For "in shore," read "on shore."
—	31	*Dele* "and."
—		Note at bottom of page, for "H.D.M." read "R.D.M."
218	22	For "imolate," read "immolate."
222	—	From bottom, for "chronometers," read "chronometer."
—	5	From bottom, for "therfore," read "therefore."
223	18	For "hard," read "hardened."
—	22	For "617," read "657."
224	4	For "should," read "shall."
242	9	From bottom, for "Brants," read "Brant."
243	6	*Dele* "on."
246	17	For "Sibly," read "Libby."
251	14	From bottom, for "three," read "five."
255	3	From bottom, for "300," read "6,300."
259	16	For "which," read "wheel."
280	12	For "invariable," read "invariably."
293		Nautical Surveys, for "Thunderer," read "Thunder."
318	16	From bottom, for "adventurer," read "adventurers."
319	15	*Dele* "produces."

ERRATA.

Page.	Line.	
319	29	For "240," read "200."
—	31	For "draws up a beam one bob," read "draws up by a beam, or bob."
353	7	For "Vice-Admiral Sir Robert Stopford," read "Admiral the Hon. Sir Robert Stopford, G.C.B."
—	22	After "19 seconds," insert "in one hour."
414	15	The Bay of Islands, for "No. 2080," read "No. 2255."
—	26	Port Lloyd, for "No. 2255," read "No. 2080."
441	20—28—30.	For "Curn," read "Curu."
571	5	For "result," read "resultant."
576	10	Before the words, "The accompanying drawing," insert, "Figure No. 1, in."
637	6	For "literally," read "laterally."
639	2	For "rotative," read "relative."
679	7	From bottom, for "checked," read "measured."
736	26	For "141," read "141, n."

Plate at 710. In fig. 7, inclining weight, for "48 oz." read "32 oz."

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His Majesty's ship Orestes, in returning from Oporto, touched upon a very dangerous Rock in the offing of Villa do Condé, on the Coast of Portugal.

When on the Rock, the above town bore as follows :

North Part	E. ½ N.
South Part	E. ½ S.

Distant upwards of three miles.